

APR 10 1922

AMERICAN ARTISAN and Hardware Record

Vol. 83. No. 14. 620 SOUTH MICHIGAN AVENUE, CHICAGO, APRIL 8, 1922. \$2.00 Per Year

**RUDY
SMASHES
PRICES**

See Double Page Spread Inside

An
Extraordinary Furnace
THE FARRIS FURNACE
—with water base

**Get
 Rid of
 the Dust**

The Farris Water Base is a simple automatic air-washer.

**A
 Farris
 Furnace**

with Water Base is the cleanest method of heating known.

The furnace is simpler to erect but the service is superior.



**Add
 Moisture**

You know what properly humidified heat means when you have installed a Farris Furnace with Water Base.

**5 to 25
 Gallons**

of water per 24 hours. The result is a May day in winter.

The bottom of the furnace has been put to work turning waste heat into warm vapor

A WONDERFUL OPPORTUNITY

WRITE TODAY TO

THE FARRIS FURNACE CO.
 SPRINGFIELD, ILLINOIS

Founded 1880 by Daniel Stern

Thoroughly Covers
the Hardware, Stove,
Sheet Metal, and
Warm Air Heating and
Ventilating Interests

AMERICAN ARTISAN and Hardware Record

PUBLISHED EVERY SATURDAY BY THE ESTATE OF DANIEL STERN

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Vol. 83. No. 14.

CHICAGO, APRIL 8, 1922.

Address all communications
and remittances to
AMERICAN ARTISAN
AND
HARDWARE RECORD
620 South Michigan Avenue
Chicago, Illinois

\$2.00 Per Year.

YOU CAN SELL RADIO EQUIPMENT AND SUPPLIES.

If you march down the unlighted streets of the town, you will attract very little attention.

But if you have a place at the head of a big circus parade down Main Street, practically everybody in town will see you and ask questions about you.

You have a chance now to get up in front of the biggest circus parade ever held in the history of the world.

Radio telephony is the greatest, most astounding, mammoth aggregation of miracles ever known to humanity.

People are flocking to it from every point of the compass.

Radio telephony is not a passing fad.

It is the beginning of a great and lasting improvement in human communication.

The time is not far distant when every home, no matter how humble it may be, will have its radio equipment.

It is no exaggeration to say that radio telephony occupies first place in the minds of the general public today.

Every newspaper is running courses of instruction in the A. B. C. of radio work.

Many supply houses are issuing manuals on radio telephony.

Its technique is being taught in the schools and colleges.

The demand for radio equipment and supplies is increasing at a tremendous rate.

You can sell this equipment and thus get up in front of the procession.

Feature radio equipment and supplies in your advertisements so that you may profit by

the timeliness of this kind of publicity.

You do not need to make a heavy investment in radio outfits. In fact, you are advised not to spend much money at first in stocking up.

The reason is that government rules are soon to be issued regulating the wave length and, therefore, the cheaper grade of receiving set would have to be changed to conform to the requirements.

Moreover, if you are more than twenty-five miles distant from any broadcasting station, it would be unprofitable for you to stock what is known as the crystal receiving sets.

In those circumstances, you would find market only for the more powerful receiving instruments.

However, before you make any moves toward putting in a stock, get some of the simpler sets of instruction dealing with theory and practice of radio telephony.

It won't take you long to learn the main principles and to become familiar with the special words used in this practical science.

Then display radio supplies and sets in your window advertising. Feature them in your newspaper publicity, and in all other forms of salesmanship, so that you may be able firmly to establish yourself in the regard of prospective customers.

It is bound to become more profitable as time goes on.

To be known as a hardware dealer who sells the necessary supplies and equipment will mean a big thing for your business in general.

Random Notes and Sketches.

By Sidney Arnold

N. A. LICHTY of Waterloo, Iowa, the newly elected president of the Iowa Sheet Metal Contractors' Association, narrates the following remarkable experience of an Iowa sheet metal contractor:

The guests at the dinner table were discussing diets.

"I lived on milk and eggs for two months," remarked one lady, "and I actually gained ten pounds."

"And I," put in the sheet metal contractor, "lived for more than a year on nothing but milk, and gained in weight every day."

"Mercy!" chorused the hearers. "How did you ever do it?"

"I can not say that I remember," smiled the sheet metal contractor, "but I presume my method was similar to that of other babies."

* * *

The other day, O. L. Moon of the Scheible-Moncrief Heater Company, Cleveland, Ohio, overheard two negroes boasting, as follows:

"Boy, Ah comes 'um a tough breed. Mah ole man done cut his nails wif a ax an' brash his teef wif a file."

"Huh, ain't so tough. Mah ole man am a plumber, an' twice a week he done shave hisself wif a blow torch."

* * *

Even to the meekest of men, revenge is sweet, says Ed H. Hofffield, vice-president and general manager Ferdinand Dieckmann Company, Cincinnati, Ohio.

He cites this amusing example:

"Hey, Bill!"

"What is it?"

"Your doctor's out here with a flat tire."

"Diagnose the case as flatulency of the perimeter, and charge him accordingly," ordered the garage man. "That's way he does biz."

* * *

There are diverse ways of carrying out instructions, says R. B. Monfort, secretary and general manager

of the Farquhar Furnace Company, Wilmington, Ohio. He gives this example:

The managing editor of a small city newspaper wheeled his chair around and pressed a button on his desk. The subordinate wanted entered.

"Here," said the editor, "are a number of directions from outsiders telling us how to run our paper. See that every one is carried out."

And the office boy, gathering them all in a large waste basket, did so.

* * *

Sam H. Jacobs, vice-president and general sales manager Fanner Manufacturing Company, Cleveland, Ohio, tells this one:

Levitzy had given his son a severe thrashing for disobedience. As the boy stood in tears, the father said:

"Now, what you t'ink of that, huh?"

No answer. So Levitzky went on:

"I know what you t'ink. You t'ink, 'Damn!' Just for that I give you another licking. I teach you!"

* * *

Ed Hoffman, Director of Sales and Advertising, Copper Clad Malleable Range Company, St. Louis, Missouri, quotes the following example of terse and effective description:

"Dat baby ob yourn am de perfect image of his daddy."

"He sure am, he's a exact carbon copy."

* * *

The importance of saying the right thing in the right words to fit the occasion is of first urgency in good salesmanship, says George A. Mortensen, vice-president and treasurer of the Matthews Banner Range Company, South Bend, Indiana.

He recalls a story which supplies a good analogy, as follows:

It was at a dinner given by the boys of the garrison in honor of some returned heroes of the "fighting 15th." The sergeant who was booked to propose the toast, "Our Regiment," had rehearsed his lines religiously to himself, but when his moment came he was nervous, and said:

"Here's to the gallant 15th, the last to reach the field and first to leave it!"

A heavy silence followed, until a corporal sprang to the rescue.

"Comrades," he began, "you must excuse the sergeant; he is not accustomed to public speaking. I will give the toast. Here's to the grand old 15th—equal to none!"

* * *

Paul E. Heller of Heller Brothers Company, Newark, New Jersey, sends me material for a good laugh, as follows:

Suspicious Mistress: "Jessie, didn't I hear you talking with somebody?"

Cook: "Yassum, reckon so."

Mistress: "Haven't I told you repeatedly, Jessie, that you must never have any of your gentlemen friends call here?"

Cook: "Hee, hee, missus. How he will laff when he hears dat! Lor' bless you, dat wasn't no gemmun frien'. Dat was jus' mah wuffless, no-count husban'."

* * *

The Man Behind the Smile.

I don't know how he is on creeds,
I never heard him say;
But he's got a smile that fits his face
And wears it every day.

If things go wrong he won't complain,
Just tries to see the joke;
He's always finding little ways
Of helping other folk.

He sees the good in everyone,
Their faults he never mentions;
He has a lot of confidence
In people's good intentions.

You soon forget what ails you
When you happen 'round this man,
He can cure a case of hypo
Quicker than the doctor can.

No matter if the sky is gray,
You get his point of view;
And the clouds begin to scatter,
And the sun comes breaking through.

You'll know him if you meet him,
And you'll find it worth your while,
To cultivate the friendship of
The "Man Behind the Smile."

The Latest News About Stoves and Ranges

Items and Discussions of Interest to the Manufacturer and Retailer of Kitchen Ranges, Heating Stoves and Accessories.

Selling Stove Accessories

Draws More Customers.

Both as a matter of service and of profit, the dealer in stoves ought to carry in stock for the convenience of his customers a supply of reliable stove polish.

Moreover, the great majority of the stoves and ranges sold today have polished metal trimmings.

Therefore, there is also opportunity for selling metal polish to the stove customer.

A good many people buy their stove polish at grocery and department stores.

It ought not to be a very difficult matter for the stove dealer to train his customers to get into the habit

of coming to his shop for stove polish and metal polish.

In this way, they are likely to come to him for other needed articles.

The oftener a customer visits a hardware store the greater are the opportunities for making sales to him.

When he or she comes in to buy stove polish, other articles in the hardware store suggest themselves as being desirable and, as a consequence, additional sales are made.

It will pay you to use a little space in your store for a special display of a good line of these stove and range accessories, such as the "Black Silk" line.

able with the surprise of the Japanese magicians.

While it is not as startling in its impressions, yet it follows the same processes of influence upon the mind and the imagination.

In view of the fact that comparatively few hardware dealers make it a practice to advertise stoves, the appearance of a stove advertisement in the local newspaper has to some extent an element of the unusual.

Every good and resultful advertisement is necessarily a bit of news.

Take, for example, the advertisement of the Charles H. Miller Hardware Company, reproduced herewith from the *Flint Tribune*, Flint, Michigan.

It tells a story which is distinctly news to a considerable percentage of prospective customers.

Improbable as it may seem to dealers who themselves are well acquainted with the advantages of a dual purpose kitchen range, many people do not know that there is such a thing as a combination coal and gas range.

It is to people of this class that the story told in the Charles H. Miller Hardware Company's advertisement has the element of surprise.

The impression thus produced is not complicated nor weakened by a surplusage of details explanatory of the mechanism of the range.

Instead, it is simply stated that "the change from one fuel to the other is simple, quick, and sure. Perfect baking and cooking results are obtained."

This advertisement gains in persuasiveness by the exceptionally graphic illustration occupying approximately one-half the space devoted to the copy.

The front part of the range shows quite clearly the part in which the coal is used. The other extremity of the stove discloses very plainly the gas pipe lead and valves.

Hardware Dealer in Flint, Michigan, Sells Stoves and Ranges by Good Advertisements.

Charles H. Miller Hardware Company Is Wise in Describing Its Business as "Reliable Hardware, Stove and Paint Store."

One of the striking stage illusions shown for years by Japanese magicians is the sudden appearance of a pot of flowers on an empty table.

To the people in the audience it is very mysterious.

No matter how closely they watch the sleight-of-hand performers, they can not perceive any mechanism by which the effect is produced.

Yet, those who know the process by which the marvel is wrought find it very simple.

The stage is set with a black curtain. An attendant is dressed all in black, with a black visor to prevent light from being reflected from his eyes.

The flower pot is already on the table, but covered with a black cloth.

Black against black is invisible. When the magician waves his

wand, the attendant dressed in black and working against a black background removes the black cloth. Then the pot of flowers appears apparently out of nothing.

There is a similar magic in advertising.

The most effective advertising is that which produces the impression of surprise or newness.

The commodity which the dealer desires to present to the buying public is in many cases unknown to them—or at least they are not aware that he has it in stock.

As far as they are concerned, it is hidden from their knowledge.

Advertising is the inconspicuous figure in the background which lifts the veil of obscurity and presents the commodity to the buying audience.

Particularly with reference to the selling of stoves this magic of advertising produces results compar-

The advertisement also derives vitality from the picture of the housewife turning on the gas and preparing to place a cooking utensil on one of the burners.

This suggests action and the suggestion of action is always powerful in stimulating the instinct of

reliability and lastingness of its service.

In these circumstances it becomes of first importance to have the backing of a well-established manufacturer whose reputation has been firmly built up by sincere and persistent publicity.

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The Liberty Favorite Combination Coal and Gas Range is one of the most remarkable ranges ever placed on the market. The change from one fuel to the other is simple, quick and sure. Perfect baking and cooking results are obtained. To be able to purchase this range is an exceptional opportunity which you cannot afford to pass by if you are in the need of a range.

See this range on display.

Chas. H. Miller Hardware Co.

Reliable Hardware, Stove and Paint Store

424 So. Saginaw St.

Phone 140

Advertisement of Charles H. Miller Hardware Company, Reproduced from the Flint Tribune, Flint, Michigan.

imitation and, through that, of desire for possession.

The selling of stoves differs considerably from that of articles of comparatively small value and brief usefulness.

That is to say, when a customer buys a stove or range, he or she wants to know something about the

The trade-mark of a trustworthy manufacturer goes a long way toward establishing the sense of responsibility which the customer naturally desires to have from the dealer in purchasing a stove or range.

The Charles H. Miller Hardware Company shows wisdom, therefore,

in featuring in this advertisement the Liberty Favorite combination coal and gas range, manufactured by the Favorite Stove and Range Company, Piqua, Ohio.

By following up this particular advertisement with advertisements featuring other advantages of this Liberty Favorite coal and gas range and also by giving some idea of its selling price, the first impression of the advertisement is deepened.

Cumulative impressions of this kind are the factors in bringing about sales.

It would be well, also, to suggest in some of the advertisements that the advantage of replacing the present kitchen range with a combination coal and gas range of this type because of the increased conveniences to be derived from such a change.

A commendable feature of the advertising of Charles H. Miller Hardware Company is the descriptive line beneath the name of the firm, namely, "Reliable Hardware, Stove and Paint Store."

Personality Is the Main Force in Business.

Apart from slip-shod bookkeeping methods, the main cause of failures is lack of personality in business.

That explains why, for example, a small shop can thrive in competition with a huge establishment which does a carload business or trainload business.

In the big establishment the customers lose touch with the owners.

They deal with some office boy or salesman and they never see the heads of the establishment.

In the little shop, they become acquainted with the owner and often become friends with him.

No matter how small your business may be, you can make good profit by energizing it with your own personality—by making friends with your customers and by keeping the human factor constantly to the front in all your transactions.

Economy separates the savage from the civilized man.

Events and Progress of the Hardware Trade.

What the Retailers, Jobbers and Manufacturers Are Doing. Latest Selling Methods and Experiences of Successful Men.

Paints and Varnishes Lead to Sales of Other Goods.

Not only as a direct source of profit in itself, but as a means leading to the sale of other hardware articles, there is wisdom in having a line of paints and varnishes in the hardware store.

For example, during the Annual Convention of the Illinois Retail Hardware Association, a hardware dealer from East St. Louis, Illinois, stated during a Question Box discussion, that he sold \$34,000 worth of paints and varnishes in a year.

People who buy paints and var-

nishes are also good prospects for paint brushes, putty knives, etc.

When they get into the habit of coming to your store for paints and varnishes, they will also buy chisels and hammers and nails and saws and other commodities.

You can quicken the sales of varnish, for example, through occasional window displays.

Clean off one-half of it with varnish remover and then varnish it until it shines, leaving the other half in the original dingy condition.

You will be agreeably surprised at the volume of sales which will result from such a graphic exhibit.

the material, workmanship, and uses of the commodities which they manufacture, distribute, and sell.

To know how to keep precision tools in good order and to be able to explain their many uses equips the retailer with ability to close sales and to hold the trade of the expert craftsman who uses this grade of tools.

Times without number it has been proved that the volume of sales of the hardware store is magnified and maintained in increased proportion by accurate and practical knowledge of the tools and other commodities offered for sale.

There are, for instance, many fairly good carpenters who do not know how to use a bell-faced hammer for driving nails.

Many of this class of mechanics insist upon a flat driving surface and as a result they have more indentations in the surfaces of fine wood than those who use bell-faced hammers.

It is an easy matter quietly and diplomatically to explain to such

Demonstrations of Material, Workmanship and Uses of Tools Improve the Dealer's Ability.

Exposition Week of Tools by the Chandler & Farquhar Company, Boston, Massachusetts, Attracts Big Crowds.

CATALOGUES are useful to dealers in helping them select stock for their stores.

But a catalogue can never take the place of actual demonstration of the goods.

Many a dealer loses sales which he might otherwise have made by not having a thorough and distinct knowledge of the commodities which he does not carry in his store.

Salesmanship is defective to the extent in which it lacks comprehensive knowledge of the goods.

The more the dealer knows about the tools and supplies which make up the assortment of the average hardware store, the greater will be his service to his customers, and consequently, the larger the volume of his sales.

As a matter of logical consequence, the manufacturer and the jobber also benefit from the increased knowledge of the goods acquired by the retailer.



Display of Hack Saws and Precision Tools at the Chandler and Farquhar Exposition.

carpenters how the bell-faced hammer can be used to best advantage and to the improvement of their workmanship.

That means selling more ham-

mers to the buyer.

Mainly with the purpose in mind of acquainting dealers with the qualities and uses of mechanics' tools and supplies, the Chandler

and Farquhar Company, Boston, Massachusetts, recently held an exposition at their store, 32-38 Federal Street, for a whole week.

Twenty-five of the leading man-



Chandler & Farquhar Co.

EXPOSITION WEEK-MARCH 13-18-1922

MINNESOTA MINING and MFG. CO. ABRASIVE MANUFACTURERS

THREE M-ITE CLOTH
THREE M-ITE DISCS
THREE M-GARNET CLOTH and PAPER
THREE M-FLINT PAPER
THREE M-EMERY CLOTH

Wetordry Garnet Finishing Paper
"That Famous Waterproof Finishing Sandpaper"

Don't Miss This Opportunity
to examine the latest development in Drill Chuck design.

The Jacobs Super Chuck

AMERICAN SWISS FILES

SYMBOL of QUALITY

THE PRECISION FILE MADE IN U. S. A.
For Bakers, Tool Makers, Mechanics, Jewelers, Etc.

AMERICAN SWISS FILE & TOOL CO.
Distributors: CHANDLER & FARQUHAR CO., 32-38 Federal St., Boston, Mass.

STARRETT HACK SAWS and TOOLS
MADE BY THE
L. S. STARRETT CO.
"The Tool-Makers of Athol"
Are Recommended and Distributed By

Chandler & Farquhar Co.

QUALITY ACCURACY SERVICE ENDURANCE

THE GENUINE MORSE DRILLS
"UNIQUE IN THE GLOBE"

"YOU only get out of a wrench what the maker puts into it."

THE BILLINGS & SPENCER CO.
HARTFORD, CONN.

500,000 BOSTON GEARS
IN STOCK
1500 SIZES

Inquiries Solicited on Your Special Gear Requirements
Catalog sent on request.

BOSTON GEAR WORKS
Norfolk Downs, Quincy, Mass.

MADE FROM RAW HIDE AND BY US

HIDE FACE HAMMERS
RAW HIDE MALLETS and
LOADED RAW HIDE MALLETS
RAW HIDE LOOM PICKERS
RAW HIDE MILL BASKETS
TENAX LEATHER FOR PICKER STRAPS
RAW HIDE GEAR BLANKS

HOLBROOK RAW HIDE COMPANY
PROVIDENCE, R. I.

Chandler & Farquhar Co.

THE NEW ENGLAND TOOL AND SUPPLY DEPOT

ANNOUNCED AS THEIR

EXPOSITION WEEK

The Week of March 13th to 18th (Inclusive) 1922

AT THEIR STORE
32-38 FEDERAL ST. BOSTON 131-135 CONGRESS ST.

and invites everyone INTERESTED IN GOOD TOOLS to attend.

The entire main floor will be devoted to demonstration booths with special factory representatives in charge.

Exposition Open Daily 8:00 A. M. to 5:00 P. M. (except Saturday)
Saturday 8:00 A. M. to 1 P. M.

The following list of well-known manufacturers will be represented with booths:

American Swiss File & Tool Co.—Vellumite Sheet Packing.
Tool-Makers File.
Armstrong Bros. Tool Co.—Lathe Tool Holders.
Billings & Spencer Co.—Wrenches, Lathe Dogs and Clamps.
Beaton Gear Works—Gears and Racks.
Brown & Sharpe Mfg. Co.—Cutters and Fine Tools.
Chadwick & Trefethen—General Critchley Reamers.
Clipper Bell Laser Co.—Belt Lasers.

Of COURSE, in addition to the lines enumerated, our stock is extremely large and well assorted. We carry:

ALUMINUM—Rod, Sheet and Mating.
ASH BARRELS—Steel and Bronze.
BOLTS—Carriage, Machine, Screw and Expansion.
BEARINGS—Thrust and Cylindrical.
BELTING and Belting Supplies.
BABBITT and BRONZE Bearing Metal.
BRASS—Sheet, Rod and Tube.
BRUSHES—Hand and Circular Industrial.

CHAIN—Cell Machine, Sash and Spooler.
CHISELS—Cold, Mortising and Wood.
COPPER—Rod, Sheet and Tube.
DRILLS—Hand, Machine and Special.
GRAPHITE—Flake, Grease, Grindstones—Frames and Fittings.
GRINDSTONES—Frames and Fittings.
GRINDERS—Autoshuttle and Lifting.
KNURELS—Hand and Machine.
NUTS—Hand and Iron.
OILERS—Bronze and Steel, Single and in Sets.

PIERS—Shapes and Styles for all purposes.
HOSE—Manila.
SELF-OPENING DIE HEADS.
SCREW—Cap, Machine and Lathe Thread and Wood.
SOLDERING COPPERS—Solder and Supplies.
TORCHES—Alcohol, Gasoline and Kerosene.
WASHERS—Bronze, Copper, Iron and Steel.

TUCK'S TOOLS

Don't question a man if he returns one of our tools.
—Give him a new one.
We stand back of every tool we make.
These goods will hold your customers.

74 Ames St., Brockton, Mass.

SKINNER CHUCKS
WILL BE ON DISPLAY

3 Jaw Universal Scroll Chuck

Demonstration of Little Chuck tools for money will be made by our representatives.

THE SKINNER CHUCK COMPANY
100-110 LAFAYETTE STREET NEW YORK

BROWN & SHARPE TOOLS & CUTTERS

Represent the accuracy and fine workmanship which only pride in product and experienced master craftsmen can accomplish.

When productive and efficient accuracy are as requisite to industry as man's—extreme precision is used to select the best quality of tools & fixtures. Prentiss warrants the speed and dependability of the protective packages.

IBS We carry a complete line of these superior tools and fixtures. Ask for catalog No. 28 of the Brown & Sharpe tools.

Shannon Babbitt
Louis Babbitt
Federal Babbitt
SOLDERS

Ask for
MACHINE BRONZE
"The Branded Bearing Metal"
SOLID AND CORED BARS

TRIMO
QUALITY TOOLS

PRENTISS VISES are just the—third hand that hold your work so securely that there's no possibility of imperfect workmanship. See and use the PRENTISS VISE—the tool with the self-adjusting jaw and the self-locking feature.

PRENTISS VISE COMPANY
100-110 LAFAYETTE STREET NEW YORK

CARD
TAPS and DIES

The Standard for 45 Years
Orders promptly filled from the largest and best assortments in New England

Chandler & Farquhar Co. 32-34-36-38 Federal St., Boston

S. W. CARD MANUFACTURING COMPANY
WALTHAM, MASS.

Advertisement Published in the Local Newspapers by the Chandler and Farquhar Company During the Exposition Week of Mechanics' Tools and Supplies, in Boston, Massachusetts.

Manufacturers of good tools had representatives present to demonstrate their lines.

In addition, these representatives gave practical talks at the trade

good tools and supplies in the home, shop, and manufacturing industry.

The purely social side of the exposition was not neglected.

During the exposition week a get-



Micrometers, Gauges, and Other Fine Tools for Motor Service Work Shown at the Chandler and Farquhar Exposition.

schools in greater Boston on the economy and satisfaction of using the proper tools.

The exposition was the first of its kind in New England and attracted thousands of persons interested in good tools for their trade.

Among the exhibits were chain hoists from the old-fashioned hand pulling kind to the newest electric push button type.

More than six hundred various sizes and shapes of files and drills that range in size from 0.0135 of an inch, which is used in watch making and on jewelry, to the heavier stone and iron drills which are more commonly seen.

One of the companies taking part in the exposition showed how, by adjusting an electrically equipped device, a pipe ranging from the ordinary water pipe to 12 inches in diameter, could be threaded by simply pushing a button, thereby eliminating the slow and tedious operation of two men.

The exposition was an undoubted success because it attracted and instructed men and women who recognize the every day need of

together meeting was held in the Chandler and Farquhar Company Auditorium, which was attended by the entire force of the Chandler and Farquhar Company, all of the ex-

as the management terms its employees.

The program included music by Horwood's Military Orchestra, an address on "Business as Viewed From the Editor's Desk," by Robert Lincoln O'Brien, Editor of the *Boston Herald*, and a talk by Bert C. Larrabee of the Burdett-Sheldon School, on "Good Health a Big Asset."

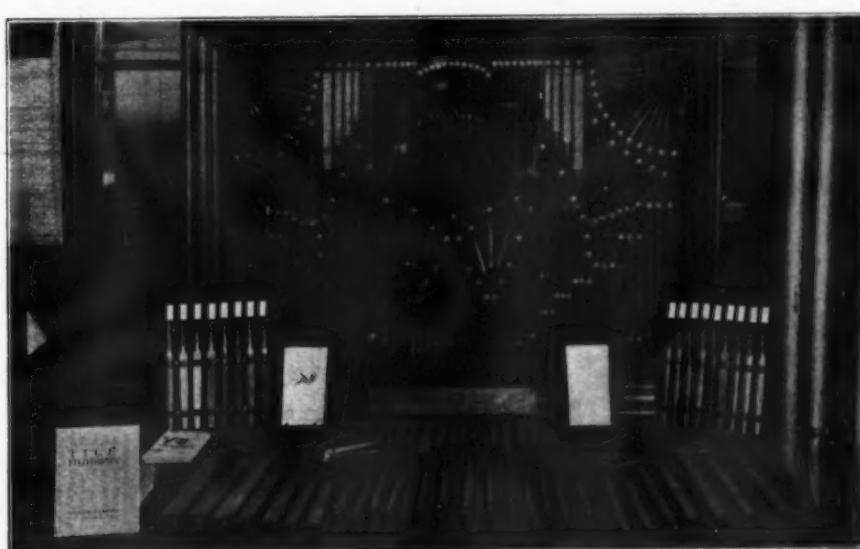
This principle of psychology is well understood by the management of the Chandler and Farquhar Company and received generous application during the exposition week.

In other words, a spirit of friendship and willingness to help and instruct prevailed throughout the entire exposition.

Cheap Goods Are Not the Cure for an Ailing Business.

When your business is infirm it needs more nourishment in the form of increased volume of sales.

The cure for an ailing business is not cheap goods which, being cheap, are undependable and calculated to impair your business progress.



Comprehensive Assortment of Files on Display at Chandler and Farquhar Company Exposition.

position demonstrators, and the sales managers of the different firms represented.

There was a buffet supper and entertainment by the "associates,"

Cheap goods are a poor investment not only from the point of view of future considerations, but from the immediate point of view of percentage of profit.

Suggestions and Plans for Window Displays.

Instructive Examples from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

WINDOW DISPLAY OF AUTO SUPPLIES.

Automobile supplies and accessories are always in season.

But for purpose of window ad-

journeys into the country, the suggestion of the window display should have the timeliness of Spring in it.

Many autoists are fond of fishing.

fishing as part of your window display of automobile accessories and supplies.

During the winter holiday season, the automobile supplies and accessories can very easily be dis-



Window Display of Automobile Tires and Accessories, Designed and Arranged by Howard C. Crabb for the Belcher and Loomis Hardware Company, 83-91 Weybosset Street, Providence, Rhode Island.

vertising they can be arranged according to the seasons of the year.

In springtime, when the weather becomes comfortable enough for

During the fishing season you can gain the attention and stimulate the imagination and desire of car owners by using suggestions of

played with suggestions of Christmas gifts, as, for example, in the window exhibit shown in the accompanying illustration.

This window display was designed and arranged by Howard C. Crabb for the Belcher and Loomis Hardware Company, 83-91 Weybosset Street, Providence, Rhode Island.

As described by Mr. Crabb, "This window was one of a series of Christmas windows which was on display Christmas week. The background consisted of three white and two green panels, the center panel was four feet wide and seven feet high and was covered with white cloth.

"At the top I pinned baby poinsettias to give a garland effect. On both sides of this panel, I had two smaller panels covered with white cloth, a red wreath with a red ribbon bow and streamers with holly and tinsel which gave a very pleasing effect.

"Between these panels and the center panel I had a narrow panel of green plush, and in front of this was a platform covered with green plush.

"On this I sat a large tire with a red ribbon bow and sign saying 'For Father' and the other end of the platform was a sign saying 'Gift Suggestions. Our Auto Department offers a complete line of auto accessories which make accepted gifts.'

"The floor was covered with white cheese cloth puffed, on which I sprinkled tinsel snow. Near the back of the window on both sides I had auto robes and gloves, and on the floor was a large assortment of auto gifts.

"This window was a great success and helped the sale of auto accessories for Christmas gifts."

Window Display Competition Has Only a Week to Run.

Here is an advantage from participation in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition which has not been mentioned thus far.

It is this: If you win one of the prizes in the competition or receive honorable mention for your window display, your local newspaper editor

will be glad to feature the fact as a legitimate item of news.

You will thus be brought prominently before the people of your community in a way which will produce a strong impression.

Actors and other people depending upon publicity for a living spend large sums in getting stories about themselves printed in the news columns because they depend for their livelihood upon popularity.

Popularity also will help you as a merchant.

So, if you have not yet entered the Window Display Competition, think of this additional advantage.

It's not yet too late to prepare and photograph a good window display for entry in this contest.

The competition closes April 15, 1922.

Photographs and descriptions for your window displays must reach this office not later than April 15, 1922.

Get busy. You are still in the running, if you want to be.

Read the conditions of the competition as printed below:

Award of Prizes.

The prizes will be awarded as follows:

First prize, \$50.00 in cash, for the best photograph and description received of window display of hardware or kindred lines.

Second prize, \$25.00 in cash, for the photograph and description second in merit.

Third prize, \$15.00 in cash, for the photograph and description third in order of excellence.

Fourth prize, \$10.00 in cash, for the photograph and description fourth in degree of worthiness.

Conditions of Competition.

The conditions of the competition are as follows:

The photograph must be accompanied by descriptions of how the window displays were arranged and the materials used.

The description is important and hence should be adequate.

These photographs and descriptions may be sent by mail or express, charges prepaid, and must

reach this office not later than April 15, 1922.

Address all photographs and descriptions to AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition, 620 South Michigan Avenue, Chicago, Illinois.

Each photograph and description must be signed by a fictitious name or device and the same name or device must be put in a sealed envelope containing the real name and address of the contestant.

This sealed envelope is to be enclosed with the photograph.

Contestants are permitted to enter as many photographs of displays as they please.

You may enter window display photographs of general hardware, machinists' supplies, builders' hardware, automobile supplies, sporting goods, fishing tackle, house furnishings, cutlery, dairy supplies, stoves, ranges, warm air heaters, sheet metal, or kindred lines.

A Competition Committee of three will be appointed.

One of them will be an expert window dresser and one an experienced hardware man.

This committee will pass upon the merits of all photographs and descriptions received, without knowing the names or addresses of the senders, and will decide the winners of the competition.

AMERICAN ARTISAN AND HARDWARE RECORD reserves the right to publish all photographs and descriptions submitted.

A Dependable Wrench Is Only Kind to Sell for Good Will.

There is almost enough fire in the rage of a mechanic in whose hands a poor grade wrench goes to pieces to ignite a dozen hay stacks.

A hardware dealer who sells a wrench of unknown brand simply for the sake of a few extra pennies of profit which he makes in comparison with the higher priced, well-established, trade-marked brand, would be invited to no love feasts at the home of such a mechanic.

Thousands of dollars of damage

can be done to you by just one accident due to poor quality in wrenches.

A wrench must stand up under strains and emergencies.

That is the reason it is best for the hardware merchant's business that he carry only such lines of wrenches as have the backing of reputable manufacturers and sustained publicity.

Sustained publicity is purposely mentioned as part of the backing by reputable manufacturers.

The manufacturer who spends money in nationally advertising his product is compelled to maintain its quality; otherwise, he will never get his money back from the investment.

Therefore, a strongly advertised article is essentially an article of high quality.

In the matter of wrenches, then, more profit can be derived from selling a line with an established reputation such, for example, as the Coes Wrench in its various forms and sizes.

The volume of sales is what counts when backed by quality.

There Is Good Profit in Razor Blade Sharpening Machines

There are several good safety razor blade sharpening machines on the market.

It would pay the hardware dealer to invest some money in one of these machines and go after the business of sharpening safety razor blades.

Good profit is to be had from this work.

It has the additional advantage of bringing more customers to the store to whom articles of hardware can be sold.

It would be advisable to study the matter thoroughly before deciding upon the type of safety razor blade machine to install.

In this matter, as in all other transactions of the hardware store, the main thing to keep in mind is the quality that goes with established reputation.

It would be a poor investment to buy a safety razor blade sharpening

machine which is in a more or less experimental stage and which has no experience back of it.

One of the best known machines of this kind has gained wide popularity among hardware dealers is the Hatfield Sharpening Machine.

The reason this particular make of machine is suggested is because there are seven sizes and, therefore, practically every requirement is met for big or little business. Besides it has a reputation of eleven years' consistent service.

Coming Conventions

American Hardware Manufacturers' Association, Spring Meeting, St. Charles Hotel, New Orleans, Louisiana, April 18, 19, 20, and 21, 1922. Frederick D. Mitchell, Secretary-Treasurer, 1819 Broadway, Gotham National Bank Building, New York City.

Southern Hardware Jobbers' Association, St. Charles Hotel, New Orleans, Louisiana, April 18, 19, 20, and 21, 1922. John Donnan, Secretary, Richmond, Virginia.

Old Guard Southern Hardware Salesmen's Association, New Orleans, Louisiana, April 19, 1922. R. P. Boyd, Secretary-Treasurer, Knoxville, Tennessee.

National Warm Air Heating and Ventilating Association, Hotel Winston, Cleveland, Ohio, April 19 and 20, 1922. Allen W. Williams, Secretary, Thompson Realty Building, 52 West Gay Street, Columbus, Ohio.

Sheet Metal Contractors' Association of Texas, April 24 and 25, 1922, Rice Hotel, Houston, Texas. J. O. Walsh, Secretary, 206 Bedell Building, San Antonio, Texas.

Missouri Sheet Metal Contractors' Association, Joplin, Missouri, April 28, 1922. Otto E. Scheske, Secretary, 2725 Morgan Street, St. Louis, Missouri.

American Zinc Institute, Hotel Statler, St. Louis, Missouri, May 8 and 9, 1922. S. S. Tuthill, Secretary, 27 Cedar Street, New York City.

Panhandle Hardware and Implement Association, Amarillo, Texas, May 8 and 9, 1922. C. L. Thompson, Secretary, Canyon, Texas.

Southeastern Retail Hardware and Implement Association, Convention and Exhibit, May 9, 10, 11, and 12, 1922, Chattanooga, Tennessee. Walter Harlan, Secretary, 460 St. James Building, Jacksonville, Florida.

Western Warm Air Furnace and Supply Association, Indianapolis, Indiana, May 15, 1922. John H. Huskie, Secretary, 2407 Cuming Street, Omaha, Nebraska.

Sheet Metal Contractors' Association of Indiana, Indianapolis, Indiana, May 15, 1922. Ralph R. Reeder, Secretary, 312 East Sixteenth Street, Indianapolis, Indiana.

Hardware Association of the Carolinas Convention, Winston-Salem, North Carolina, May 17, 18, 19 and 20, 1922. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

National Association of Sheet Metal Contractors' Convention and Exhibition in the Cadle Auditorium, Indianapolis, Indiana, May 16, 17, 18, and 19, 1922. Edwin L. Seabrook, Secretary, 608 Chestnut Street, Philadelphia, Pennsylvania.

Mississippi Retail Hardware and Implement Association Convention and Exhibit, Fair Grounds, Jackson, Mississippi, May 24, 25 and 26, 1922. Headquarters, Heidelberg Hotel. E. R. Gross, Secretary-Treasurer, Agricultural College, Mississippi.

Associated Advertising Clubs of the World, Milwaukee, Wisconsin, June 11, 12, 13, 14 and 15, 1922. Carl Hunt, Secretary, 110 West 40th Street, New York City.

National Retail Hardware Association, Chicago, Illinois, June 19, 20, 21, 22 and 23, 1922. Headquarters, Hotel Sherman. Herbert P. Sheets, Secretary-Treasurer, Argos, Indiana.

Master Sheet Metal Contractors' Association of Ohio, Zanesville, Ohio, July 18 and 19, 1922. W. J. Kaiser, Secretary, 123 East Chestnut Street, Columbus, Ohio.

Retail Hardware Doings

Florida.

A new hardware firm, the Hart-Hosea Hardware Company, has started in business in Miami.

Illinois.

The Savanna Hardware Company at Savanna has been enlarged and improved.

Fire destroyed the Martin and Sull Implement Store at Stonington. The damage is estimated to be between \$8,000 and \$10,000.

W. J. Bingham has purchased the hardware store of E. C. Fitzgerald at Bingham.

Fire damaged the Enterprise Tool Works at 126 South Clinton Street, Chicago.

A deal has been closed at Johnson City whereby Will Cox, Percy Lay and T. A. Cox become the owners of the M. L. Davis Hardware Store.

Michigan.

Ivan Spittler and C. J. Horn have purchased the Whitenack Hardware stock at Adrian. The firm will be known as the Spittler, Horn Hardware Company.

The Neller Hardware Company, 117 East Franklin Avenue, Lansing, has changed its name to the Baker-Woodmancy Hardware Company. Harold B. Woodmancy has purchased the stock originally owned by Andrew Neller and John Klooz. Cleo E. Baker is the only one of the original stockholders left in the corporation.

Ohio.

G. E. Womeldorf, president of the Womeldorf and Thomas Company of Gassipolis, has purchased the Point Pleasant Hardware Store from Frank Swigert.

Wisconsin.

The Barlow Steel and Hardware Company of Ripon, has been damaged by fire.

The Jabusch Hardware Company, Deer Park, has been incorporated with a capital of \$25,000, 250 shares, par \$100. Incorporators are Frank Jabusch, Ernestine Jabusch, and Emil Gust.

Facts of Warm Air Heating and Ventilating.

Reports of Progress in Warm Air Heater Research Work.
Ventilating Factories, Theatres and Other Buildings.

"Rudy" Develops a Million Dollar Corporation in Seven Years by Sincerely Making Friends

*When Friendship Is the Central Motive of a Business,
Its Products Are Made Fit for Friends to Buy and Use.*

NO matter how complex its variations may be, the substance of human nature never changes.

Deep in the pith and marrow of every one of us is an immense,



A. E. Rudolphi, Founder of Rudy Furnace Company.

never fully satisfied capacity for friendship.

Even love itself is friendship intensified.

Friendship is the universal factor of life in every relationship.

This is a truth so clear that we cease to be conscious of its possibilities just as we cease to be aware of the oxygen in our atmosphere.

Once in a while, there arises a man who is thoroughly saturated with this truth and who has sense enough to apply it to his business.

Such a man is A. E. Rudolphi, founder of the Rudy Furnace Company, Dowagiac, Michigan.

He started out with the idea that dealer and manufacturer could be and should be friends, with interests in common.

Being friends in his understanding of the relationship means being honest with one another, helpful, sharing good things, trustworthy, and holding always to justice and sincerity.

All the other desirable virtues of business, such as quality, service, and workmanship, are necessarily included in the practice of friendship.

Friendship is both the motive and the achievement.

And in the case of A. E. Rudolphi, popularly known as "Rudy," it has found embodiment in the remarkable growth of the Rudy Furnace Company from modest beginnings seven years ago when only fourteen moulders and three salesmen were employed.

Today the Rudy Furnace Company is a million dollar corporation employing nearly three hundred men and more than a score of traveling salesmen.

From the outset, "Rudy" made

business a friendship and friendship a business.

As he says in the "Rudygram" reproduced herewith:

"Our customers are not merely names on our books; they are our business partners and friends as well."

The dealer has never been viewed merely as a source of income by the Rudy Furnace Company in the carrying out of this policy of friendship.

Naturally, being imbued with the idea of friendship as the basic force of success in human relationships, "Rudy" early began to shape his business in such a way as to bring the dealers into more intimate connection with the Rudy Furnace Company.

He evolved the plan of profit-sharing whereby every Rudy Furnace Company dealer is today a partner in the business.

With friendship as the steadily driving impulse, the Rudy Furnace Company logically had a motive for making products fit for friends.

Out of this developed almost inevitably the prosperity amply attested by the phenomenal growth of the Rudy Furnace Company in the brief period of seven years.

Rudygrams

Rudy says.

"Our customers are not merely names on our books; they are our business partners and friends as well."

RUDY FURNACE CO.

DOWAGIAC, MICH.

One of a Series of "Rudygrams" Now Become Famous.

The principle thus practiced by the Rudy Furnace Company is as universal in its application as sunlight.

The dealer can achieve similar success in his business by using the same principle of friendship honestly, sincerely, and constantly.

Of course, he must have it within himself.

Friendship can not be counterfeited. You can not deceive even the most stupid customer by a pretense of friendship, because we all have an instinct which warns us of such counterfeits.

Cost-finding systems, shop tickets, efficiency methods, elaborate book-keeping, close auditing, and the like, have been used by hundreds of corporations that went into bankruptcy in spite of all such wonderful devices for profit-making.

Indeed, these things are futile, if they be not vitalized by the human factor.

The Rudy Furnace Company from the administrative side of the business, has an effective office and factory system, but its mechanism is made subordinate to the human factor.

Always it is easier to get a high average of production and sales at

minimum expense when heart and mind are both engaged in furthering the results.

This is evidenced in the good fellowship which prevails throughout the personnel of the Company.

Without sacrificing any of the strong characteristics of their individuality, the officers of the Company are in perfect accord upon all problems of major importance affecting the carrying out of its policies.

Charles J. Biek, Vice-President and Sales Manager, has succeeded admirably in maintaining an uninterrupted flow of friendliness and cooperation between the headquarters of the Company and its staff of traveling salesmen.

Arthur F. Frazee, Secretary and Manager of Advertising, is doing exceptionally good work in interpreting the Company's spirit of friendship through forceful publicity.

The traveling sales representatives of the Rudy Furnace Company are more than employes working for salary and commission.

They are friends working for and with friends, and they make friends for their organization.

ways through which pipeless heat is producing comfort and satisfaction to my knowledge as far away as 80 feet from stairway.

I have a vivid recollection of a two-story house, six rooms on main floor and seven on second, heated with a pipeless, which was getting too much heat on second floor.

The six chambers on second floor are located three on each side of a three foot hall extending at right angles to the stairway.

Bath room is at the end of this hall, and it is 60 feet from the stairway to the far end of bath room.

A thermometer on the wall of bath room always registered three degrees higher than if placed in the room at head of stairway.

It would seem that this should allay the engineer's fears about long travel to chamber doors.

At this point I might again show the importance of proper location by stating that the excess heat supply to second story was remedied by moving the furnace just five inches.

However, the bath room at end of hall maintained its temperature three degrees higher than the chambers.

The reason for this the engineer will readily understand.

Another gentleman says "Short and Square" is the ideal building for the "One-lunger."

If in his imagination he will go to northern Minnesota he will find a hardware store 24x80 feet facing north with full glass front.

Because the basement excavation is not sufficiently deep, at any other point, the pipeless is placed four feet from the south end of the store.

I visited this store when the mercury was jazzing around the bulb at 40 below zero, and the heat from this comfort producer was turning the frost on the north glass front into trickling streams, proving that you can stretch a short square into an eighty foot oblong and still trust the pipeless even with Old Jack doing his "durndest."

(To Be Continued.)

Turton Makes Comments on Some of the Answers in the Warm Air Heater Special.

He Analyzes Formula for Rating Capacity and Efficiency, and Indicates Need of Including Factor of Radiating Surfaces.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by George W. Turton, Belleville, Illinois.

(Continued from April 1st Issue)

But I repeat the caution—beware!

I've paid for my lessons and am offering you this gratis.

There are several kinds of open stairways and some of them are treacherous performers from the pipeless point of view; yet the treachery is easily subdued by the correct formula, which can not be given here without cuts and a lengthy explanation.

The conscientious pipeless locator is always seriously concerned about the open stairway.

On the other hand I have never known of a closed stairway cutting any capers if the furnace location was properly made.

In connection with a wide-open stairway I notice a Heating Engineer says that all doors from the hall above should "not be too far from the stairway."

This intimates that the heat would not distribute to the rooms if otherwise.

I am sure this engineer would meet a surprise if he were to visit some of the narrow winding hall-

Proper Amount of Humidity Means Comfort and the Buying Public Will Pay for Comfort.

In Evaporating Water the Three Things to Be Considered Are Temperature, Surface, and Location with Respect to Air Currents.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by C. H. Spaulding of Farris Furnace Company, Springfield, Illinois.

WE are being constantly reminded of the evil effects of dry air in heated houses, how it makes happy people cross, well folk sick, new furniture old and opens up cracks in the floors so you can see the cellar lights.

It is all too true, but I am going to forego a discussion along that line.

We might recall the picture we were given years ago of the usefulness of atmospheric pressure, how it envelopes all living things and prevents their blowing up, keeps our insides in and our outsides on.

Vapor pressure, or humidity, is just as useful in a little different way. It prevents our drying up and blowing away. It is the governor of evaporation, another one of Nature's checks and balances.

While atmospheric pressure keeps us from losing our breath, vapor pressure keeps us from losing the 66 per cent or more of moisture of which we are composed.

The ramifications of this subject are as infinite as Nature itself but most of us must sum it up in the phrase "Ain't Nature Wonderful," and let it go at that.

However, the practical side of this subject is simple and extremely important in heating and ventilation.

Proper humidity means comfort and the buying public is in the market for comfort.

The only points we need to consider are first how much humidity does the public want and second how can we supply it in a simple practical way at a reasonable cost.

How much humidity the public wants he doesn't know himself so we have to find out for him.

Some folk say he does not need any more than he is already getting.

Others supply him a pint at a

time, on a prescription, as it were. The amount he needs, however, has been determined by Nature long ago.

By several hundred thousand years of schooling in which she adopted the simple expedient of killing off those who did not learn, Nature trained the race to live under the conditions she imposed.

She taught it, by changes of weather, to live at 0 degrees or at 100 degrees Fahrenheit or at any

The manner of heating the air has nothing whatever to do with the dryness.

It is cold that takes moisture out of air, not heat. The chill of evening makes dew form on the grass.

The chill of the upper air currents makes clouds form and rain or snow fall from air which was perfectly clear at higher temperatures, and the air from which the precipitation occurs is drier by exactly the number of gallons of water which fall.

The dryness in a heated house, therefore, is due to the previous removal of moisture from the air before it entered the house. The amount of water to be added then is easily found.

The amount of water to be added is the difference between the

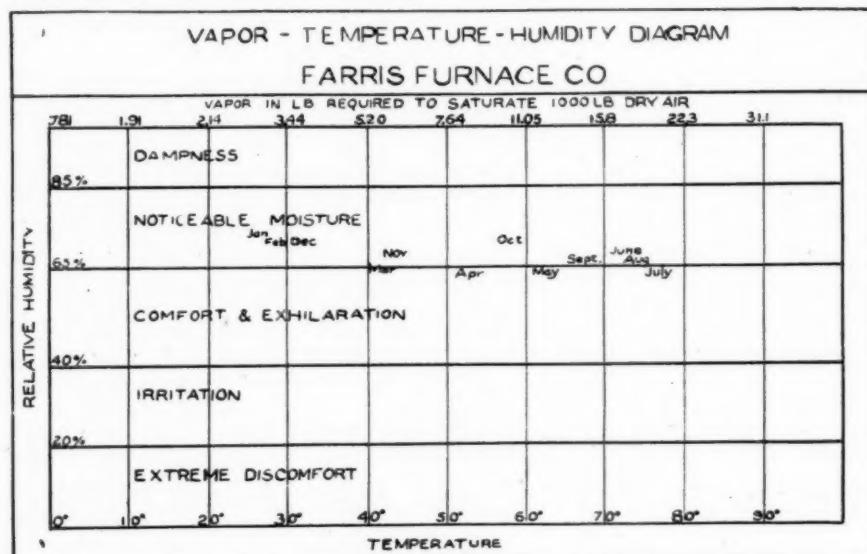


Diagram Showing Relation of Water Vapor to Temperature and Humidity.

temperature between, but we must remember that whenever she changes the temperature she also changes the water content of the atmosphere by increased evaporation by condensation.

At 0 degrees 1000 pounds of air out of doors contains only a fraction of a pound of water while at 50 degrees it will be found to have picked up ten times as much.

Man, being an intelligent animal, found he could adjust temperature to suit himself but he overlooked humidity with the result that he suffers from dry air in his heated house.

Now let us get this point straight.

amount found in the air at winter temperatures as it is brought into the house and the amount found in the most pleasant atmosphere at 70 degrees Fahrenheit.

We have taken for our standard average May day conditions at noon in central Illinois. According to the United States Weather Bureau the mean temperature at that time is 71 degrees and the mean relative humidity is 52 per cent, which signifies 8.3 pounds of water per thousand pounds of dry air.

Now if you bring into the house air at 40 degrees containing on the average about 4 pounds of water per 1000 pounds of dry air, and

D MEYER Pres

GEO MEYER, Vice Pres

GEO HARMS, Sec'y & Treas

CAPITAL AND SURPLUS \$ 300,000.00

THE MEYER FURNACE COMPANY

MANUFACTURERS OF THE

**WEIR ALL STEEL GAS AND SOOT CONSUMING
FURNACE
WARM HOME CAST FURNACE**

PEORIA, ILL.

December Sixteenth,
Nineteen Twenty-one

The American Artisan & Hardware Record,
620 South Michigan Boulevard,
Chicago, Illinois.

Gentlemen: (Attention E. Cohn, Manager)

Our business for 1922 is already assuming such proportions that it is our desire to have all matters pertaining to sales for the year arranged as soon as possible, and we would therefore appreciate your sending us a contract for our 1922 advertising space in your publication, as soon as possible.

If a little truth will do no harm, we might add that your publication seems to reach the highest class of real, live warm air furnace dealers and installers, and it is interesting to note the great care taken in fully covering the real news of the heating world. We are more than pleased with your service and co-operation and with the results obtained from the use of advertising space in the American Artisan.

We have had a comparatively nice business in 1931 and we are now looking forward to a very good business in 1932.

With high regard and best wishes, we remain

Yours very truly,

THE MEYER FURNACE COMPANY

R. C. Riveter
Gen'l Manager

HCW:K*

RUDY SMASH

In the Most Startling Advertising Campaign

RUDY 1922 INTRO

EFFECTIVE--Between the dates of April 10th and April 20th, 1922.

BENEFITS--All Rudy Dealers--New and Old.

OBJECT--To permanently lower prices throughout the country.

WE want to reduce our prices. In order to do so we must have quantity or we could not do it. We must have a thousand dollars in National Advertising may accomplish this result. But we must have a hundred thousand dollars in a lavish advertising campaign we are going to distribute the benefit of this reduction to all dealers. We will not profit in this transaction for us. We don't hope for any.

ONE HUNDRED THOUSAND DOLLARS

THE FULL BENEFIT OF WHICH

THE DEALER

CAMPAIGN THAT WAS RECOMMENDED

Under this plan the advertising man gets	\$100,000
National Advertising Campaign	100,000
NOT ONE CENT OF WHICH BENEFITS THE DEALER		

CASH INTRODUCTORY OFFER

We want dealers to have Rudy Furnaces to show to their furnace prospects.

Pictures don't sell furnaces—but let your customer see the velvety finish of Rudy Charcoal Iron and handsome design of "THAT DIFFERENT FURNACE" and he will have no other. That's why we make this unprecedented cash introductory offer.

OUR PROPOSITION

From April 10th to April 20th we will accept orders for one each Rudy Diving Flue (Hy-power heater), Rudy Top Radiator and Rudy Pipeless—choose the size you wish of each style—at prices quoted F. O. B. Dowagiac net cash, not subject to further discount.

You may order one furnace of any style or you can order one furnace of each style, but we will not sell *more than one furnace of any one style*. The purpose of this offer is to get furnaces on the dealer's floor where buyers can see them.

RUDY FURNACE COMPANY

SHES PRICES!

Sign Ever Launched on a High Grade Furnace

INTRODUCTORY OFFER

10th to 20th, inclusive

10d--Under Rudy Full Price Protection Guarantee
rough Quantity Production

ity production. Advertising solicitors tell us that the expenditure of one hundred dollars--Under Rudy Full Price Protection Guarantee through Quantity Production

But we prefer rather to give this money to our dealers. Instead of spending one hundred dollars, we will distribute this amount in cash to the purchasers of Rudy Furnaces. There will be

DOLLAR ADVERTISING CAMPAIGN WHICH GOES TO RUDY DEALERS E PLAN

CAMPAIGN WE HAVE ADOPTED

Under this plan Rudy Dealers get this
 4,000 Furnaces with average price reductions of \$25.00 \$100,000
 100,000
 EVERY CENT OF WHICH GOES TO THE DEALER

THE FINEST HIGH GRADE FURNACE EVER BUILT

These furnaces are being produced daily from all new clean Rudy Charcoal Iron without an ounce of scrap.

The genuine original Rudy construction sets an absolute standard by which you can judge all others. "THAT DIFFERENT FURNACE" has been imitated but never equalled. Remember, Rudy is distinctly a quality product, being the only furnace in America made of Charcoal Iron.

A RUDY AGENCY GOES WITH THE FIRST SHIPMENT

There has never been an offer of such startling significance to the furnace buying public. We believe that costs can be reduced by quantity production and quantity production can be achieved thru increased sales. That's why a Rudy Agency goes with the first order received from your community. Will you be the Dealer to get it? Write us for our "RUDY 1922 INTRODUCTORY OFFER" prices—act before the idea gets past.

— DOWAGIAC, MICHIGAN

Malleable Iron Range Company

Manufacturers of
Monarch Malleable Ranges



Beaver Dam, Wis., 1/14/22.

Officers:
Fred W. Rogers, President
Andrew G. Hill, Vice-President
Arthur S. Bowron, Secretary
John C. Zander, Treasurer

American Artisan & Hardware Record,
620 South Michigan Blvd.,
Chicago, Illinois.

Dear Mr. Pedersen:

We are attaching contract to cover our advertising in
the American Artisan & Hardware Record for 1922.

Last year was the first time that our advertising
appeared in your publication and as you will notice,
our contract for 1922 calls for more space than we used
in 1921.

This fact alone certainly signifies that we consider the
American Artisan & Hardware Record a Trade Journal to
get our story of MONARCH and PARAMOUNT Ranges across to
the Hardware dealers.

We have found the many stories regarding dealers and
their range problems in the American Artisan & Hardware
Record of considerable interest and we know that this is
the kind of reading matter which every live wire dealer
appreciates and actually reads.

In this connection we certainly appreciate the hearty
co-operation you have given us and we know that you will
stand back of us in our 1922 advertising efforts.

Very truly yours,

H. J. Buchanan
ADVERTISING MANAGER.

WIB:LKB.

heat it to 70 degrees without addition of moisture you will have a relative humidity of 25 per cent or desert conditions.

If you bring in air at 0 degrees containing 0.5 or 0.6 pounds of water per 1000 pounds of dry air and heat it to 70 degrees without addition of moisture you will have a relative humidity of about 4 per cent. This condition is not found anywhere out of doors.

We may add here that 4 per cent humidities are likewise never found in our homes.

The air, before it is discovered in such condition, has absorbed moisture from the kitchen, the bath, the furniture and from our bodies until it makes a better showing at our expense.

Twenty per cent humidities, however, are common in heated houses and on the Great American Desert.

From the data which are available we can now calculate how much water must be evaporated to obtain May noon conditions.

A house having a capacity of 13,500 cubic feet holds 100 pounds of air at 70 degrees Fahrenheit.

If the outside temperature is 0 degrees we must add 7.7 pounds of water every time the air in the house is changed.

If it is changed once an hour we must add 185 pounds or 22.3 gallons of water per 24 hours.

There is no guess work about this and the results can be checked.

The effect of evaporating 22.3 gallons of water per 24 hours in a 13,500 cubic foot house, when the temperatures are 0 degrees outside and 70 degrees inside, is 50 per cent relative humidity on the hygrometer and May noon feeling on the person.

If the air leakage into the house is less than is usually calculated, the humidity may be somewhat higher but it will be extremely rare to find a humidity above 60 per cent and this figure is well within the comfort zone.

The man who has never tried evaporation on this scale has a surprise in store.

He may have talked moisture and

thought he could detect a difference with one, two or three gallons evaporated per day but when he gets the air of a heated house in winter to a humidity of 50 per cent with the temperature at 70 degrees he realizes that all he has claimed for real humidity is true in a superlative degree.

The missing link has been the inability of the vapor pans to deliver the goods.

There may be a number of ways to put proper humidity into the air of a heated house and the point I have tried to bring out is that if the humidity is to be there it must be put there by the addition of perfectly definite quantities of water.

These quantities are much larger than are usually attempted and can be obtained only by the intensive application of the principles of evaporation.

In evaporating water three things are to be considered, namely, temperature, surface, and location with respect to air currents.

In other words, the water must be warmed, a large surface should be exposed and it should be so located that air currents will move across it and carry away the vapor as fast as formed.

Attention to all three of these requirements will secure easy, rapid evaporation.

One is convenience, for the man who wants the comfort of proper humidity does not want to take on a nuisance.

Another important point is that the humidifier must not interfere with the other proper functions of the furnace.

For example, it should not obstruct the free flow of air through the casing or pipes.

These and other points are linked up commercially with the prime requisite that the cost must not be prohibitive to the average buyer.

A water base for a furnace which accomplishes the ends in view has recently been developed and put on the market.

It is an open cast iron tank 2 inches deep.

The diameter of the tank is the diameter of the furnace casing.

The rim of this tank is made to carry the furnace casing, taking the place of the old base ring.

The bottom of the ash pit rests on guide supports cast in the water base and is elevated $\frac{1}{8}$ inch so as to permit the water to flow beneath the ash pit where it is warmed.

The water base has a capacity of 10 to 14 gallons in the different sizes.

Two cast iron doors for the casing are provided with the furnace to make the pan thoroughly accessible for filling and cleaning.

It may be filled with bucket, hose or special pipe extension, either with or without a float valve.

The relation of water vapor to temperature and humidity is shown on the accompanying diagram.

Take any temperature at the bottom of the diagram: multiply the figure directly above on the top line by the per cent relative humidity and you have the number of pounds of water vapor per thousand pounds of air.

I have spotted the average temperature and humidity for each month of the year (Springfield, Illinois, 5 year average).

The average humidity throughout the year is rather higher than the ideal because this average includes humidities at night which are higher than during the day and are undesirable.

However, you will note that the average humidity for any month is not far from 67 per cent but that for January, with an average temperature of 26.9 degrees, this means 2.15 pounds of water vapor per 1000 pounds of air while for July, with an average temperature of 76.6 degrees, it means 12.34 pounds of water vapor per 1000 pounds of air.

Buys Interest of Partner in Warm Air Heater Business.

W. H. Parker, 1010 Tenth Street, Broken Bow, Nebraska, has purchased the interests of his partner in the business of Anderson & Parker, dealers and installers of warm air heaters.

Practical Helps and Patterns for the Tinsmith.

Aids to the Improvement of Craftsmanship and Business. News from Various Branches of the Sheet Metal Trade.

DETAILS FOR METAL TOMBS WITH PATTERNS.

By O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

In taking up the larger designs of metal tombs which are possible to make of metal, we must again state for fear that some of the readers have failed to read some of the former articles, that galvanized iron and tin are unsuited for such work, and that painting should also be left aside.

The only metal that may be used is copper, bronze, a hard sheet lead, or possibly a colored aluminum.

All joints should be welded where possible and where this is not possible, they should be well locked by double seaming or something equal to it.

If the writer should learn that some unscrupulous tradesmen disregarded these instructions and would follow his own selfish inclination, making metal tombs of tin or galvanized iron, making the public believe that he is giving something that is inexpensive and durable as long as they would want it for themselves, the writer would feel very bad because of ever introducing a possible great field of work.

In this drawing Figure 12, we take up a unique design that has considerable pattern drafting to it and that requires a degree of taste in designing.

The front elevation is first drawn, proportioning the members to what you feel will look satisfactory from the distance from which such a design is viewed.

When the front elevation is finished as shown, then project the end elevation.

The development of the patterns takes place by the projection proc-

ess the same as most cornice work or straight pipe fitting.

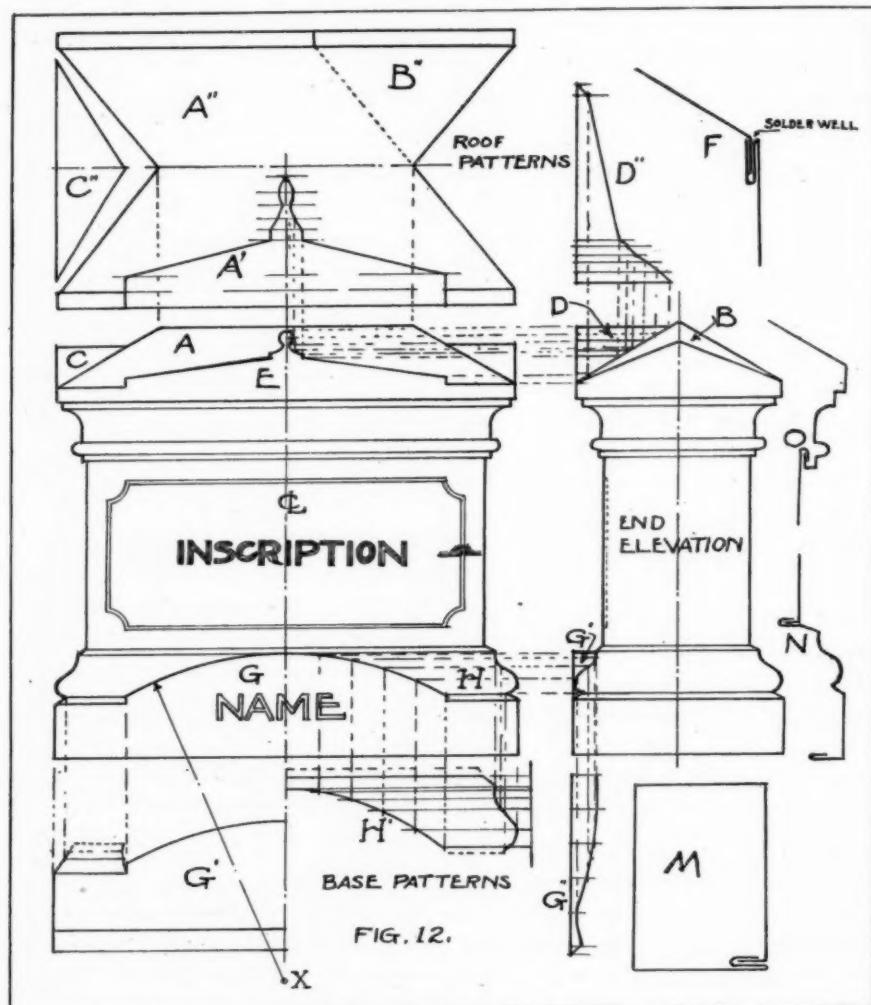
To lay out the roof pattern, pick the girth from the slant of end elevation and set off above side elevation.

Then project the lines and this gives the miter cut.

tend lines into the end elevation, thus cutting the slant line of the main roof D.

Then pick the girth from the gable E of front elevation and set it above end elevation as at B".

Draw stretchout lines and from each point in the roof D erect lines



Details for Metal Tombs With Patterns.

Observe pattern A" is for the roof while the pattern B" enclosed by the dotted line is for the end, while the pattern C" is for the small gable on the ends, whose girth is also picked from the end elevation.

To set out the patterns for the roof of front gable E, we divide all curved lines in equal parts, and from each point and bend we ex-

thus cutting lines in similar number and you have the pattern D".

For the lower base the reverse ogee H is developed as any square pattern by dividing this curve in equal parts and dropping lines into the pattern H'.

The face of this base is set out as at G', while the roof for this base will miter to the reverse ogee as at G' so divide the curved line

of front elevation in equal parts and project these lines into end elevation as at G'.

Then pick the girth from front elevation and set it off as at G", and develop them as shown.

This will give the roof for this segmental projection of the base on the reverse ogee.

Where the seams are not welded, they should be made as at F, O, N and M; but it is preferable that they should be welded as that will make a secure joint equal to the other metal and will not be so affected by expansion and contraction.

The panels and the inscription would be best stamped in a press so as to have uniformness in the inscription and evenness in the depth of the panel.

Then this base and part of the body should be well reinforced with possibly cross partitions or band irons and then reinforced with concrete, so as to give weight to the tomb and also prevent bruising and disfiguring.

Urge Attendance at Missouri Sheet Metal Convention.

In order to get the greatest amount and variety of exchange of ideas for the good of the sheet metal trade, Otto E. Scheske, Secretary Missouri Sheet Metal Contractors' Association, St. Louis, Missouri, is urging full attendance at the forthcoming convention of that organization, which is to be held April 28 and 29, 1922, in Joplin, Missouri. He has sent the following letter to every one connected with the sheet metal trade in the State of Missouri:

"Members should by all means attend. Non-members are especially invited to participate. The Missouri State Association is part of the National Association of Sheet Metal Contractors of the United States. It is essential that we meet to uplift our business and place it where it really belongs in this Great Commonwealth.

"Missouri is one of the spokes of a great wheel in which, this year, Indianapolis is the hub. Delegates

are to be elected to represent us at the National Convention, May 15 to 19th.

"There never was a time more necessary for men engaged in our line of business, Sheet Metal and Furnaces, to meet and discuss matters so vital to our interests. With this in view a program is being arranged to combine more business with Entertainment. Why not take a two day vacation? It will help in your business, brighter prospects and nearer the goal of success.

"The Joplin Chamber of Commerce has invited us to their city and promise us no barbed wire entanglement to hamper our freedom.

Let's go! The experience gained will more than pay the time and expense.

"Since our first meeting last May in St. Louis, our membership has increased. The Missouri Jobbers' and Salesmen's Auxiliary are in perfect working accord with our association. We can hope for success in Joplin.

"The enclosed card will greatly assist us, also the Auxiliary in showing Missouri's usual hospitality. Fill in and return—no better time than now. Program will be mailed to you in due time.

OTTO E. SCHESKE,
Secretary."

Describes Fixtures and Tools Required as Equipment for Automobile Radiator Repair.

Preparing the Radiator for Repair; Testing It for Leaks; and Soldering the Leaks Are the Three Main Operations.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by
E. E. Zidek, New York City.

TWENTY-FOURTH ARTICLE.

THE repairing of radiators might be divided roughly into three main operations: (a) preparing the radiator for repair; (b) testing it for leaks; and (c) soldering the leaks.

Equipment, accordingly, consists of fixtures for the preparatory operation; of testing fixtures; and of soldering fixtures, both by the coppers and the torch methods of soldering.

The preparatory fixtures are two tanks, one lined with lead, to contain acid solution, and the other to boil water in. Both are large enough to house the largest of radiators and deep enough to permit solution or water totally enveloping the radiator submerged in it.

The acid tank has a solidly fitting cover, lead lined, to close over the tank and make it, as much as possible, air-tight.

The cover is best if made to slide over the tank, possibly in the direction of the water tank, rolling upon the latter when slid off from the former.

The water tank has a gas or other practical water heater connected with it.

The acid tank cover, sliding back and forth from tank to the other, is used for a table upon which the

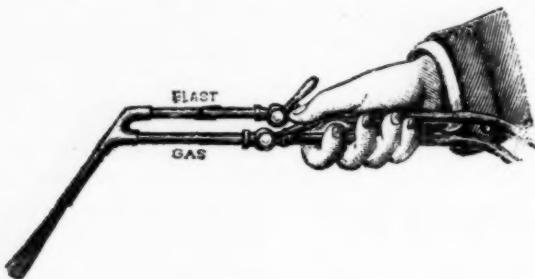


radiator is laid and removed from its shell.

At the sides of the tank are provisions for hanging in the tools one needs in connection with the work

of cleaning the radiator of mud, dust, and other foreign substance; also screwdrivers, wrenches, pliers, and similar tools for removing the radiator from its shell.

Both tanks have provisions for



removing their contents easily, if desired. The water tank has a running water faucet and a hose connection handy to it.

The testing outfit in a radiator repair shop consists of a wooden tank lined on the inside with galvanized iron, about 10 feet long, 3 feet wide, and 15 inches deep, supported on legs so as to be 30 inches high over all.

This tank has two lattice tables sliding upon it easily, so that they can be moved to any desired place on the 10-foot length.

It has running water connection handy to it, and a provision for emptying it. A gas pipe branch runs up to its rear part, also a pipe from the air tank.

Above it is a provision for wire solder to be rolled off as needed. Also provisions for tools to hang upon its sides.

A further item is an air compressor and air storage tank. These



can be situated anywhere in or adjoining to the shop.

Pressure indicator and connections are usually supplied with the outfit.

Among the tools needed at the testing tank are files, scrapers, wire brushes, pliers, snips, all small tools needed for soldering and cleaning, and rubber stoppers of various sizes.

A small-size rubber hose extends from the air pipe. A pressure regulator is at the air pipe outlet to

adjust pressure in the rubber connection to the desired weight.

Finally, the soldering outfit for a radiator shop may consist of either gas, gasolene, or even charcoal soldering pot and, if there be no city

gas, a gasolene torch outfit in addition.

The former is for soldering with coppers. The latter for soldering with torch flame. The different size tips and the torch come with the latter outfit.

If there is gas on the premises, the combination of gas with compressed air in a torch made for that purpose will be the best to use.

Torches or blow pipes, as they are called, for city gas and air, are being manufactured by various concerns and sold at a comparative small cost.

If there is no city gas nor natural gas installed, gasolene blow pipes will do the work.

No excessive heat or pressure is required for the repair of radiator cores.

A gasolene gas generator combined with a foot blower producing one pound of pressure and a good torch in connection is a very effi-

cient outfit for soldering up core leaks that can not be reached by the soldering copper.

And, anything that can be soldered by coppers, is better done in that way. Only the leaks inside the core, within air passages too small to admit the copper, really are easier soldered by the torch flame.

There are different torches to be used with city gas, with natural gas, and different ones with gasolene.

The repairer should order his torches or blow pipes accordingly, stating whether they are to be used with city gas, natural gas or gasolene.

The above described Radiator Repair Outfit will do for the largest of shops.

Three men can work comfortably at the 10-foot testing tank.

For smaller shops, the repairer is well fixed if he makes himself two wooden tanks 30 inches by 30 inches by 15 inches high, and one galvanized tank of the same dimensions.

One of the wooden tanks is to be lined with lead to serve for



cleaning the radiator by means of submersion in acid or other cleansing solution.

The other to be lined with galvanized iron and serve as testing tank.

And the galvanized tank, with any hot water connection or hot water producing apparatus, to boil out the dirt and take off the acids after the radiator has been subjected to the acid submersion.

(To be continued.)

Gives Method for Conducting Water Around Chimneys.

Written especially for American Artisan and Hardware Record by L. S. Bonbrake, Peoria, Illinois.

Often times skylights, chimneys or other obstructions are placed in relation to the roof as to make it impossible for the hanging eave trough to extend the full length of the roof.

In this case it is advised to hang the trough on the clear end of the eave closely abutting the chimney; the balance of the water can be caught by the metal flash at the top of the chimney by extending it on out to the gable.

If the obstruction is near the center of the eave, a flash covering a V-shaped wood set in may be used to throw the water both ways.

Or in case of a lengthened out space where it is necessary to have the water diverted one way, a 1 by 2½ inch board may be used to con-

struct a small channel acting in the same way as a roof gutter.

This may be taken in as part of the obstruction flash, and carried

on, the water thus caught flowing out upon the roof again upon reaching the clear, and eventually into the hanging trough at the eave.

Jimmie Chumpp Lost a Flivver, but Not Because It Was Stolen by Automobile Thieves or Destroyed in a Wreck.

Its Value Gradually Dwindled Away Because He Failed to Make Provision in Overhead Expense for Its Replacement.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio.

JIMMIE CHUMPP was as busy as a cat with two heads in a fish house.

When I entered his place of business he did not seem to have time to look up at me. Finally, I made a noise to attract his attention and Jimmie looked up and said 'hello.'

It was early morning, and he was getting his two men started away to jobs. Presently we were alone and I wanted to pitch right in and sell him a bill of goods, when he cut me short by saying:

"Nothing doing today. I am not going to buy a single thing this trip."

"Why not?" I asked.

"Because," he answered, "I have plenty of your goods on hand, and I will not go to any expense because I must get me a new flivver for my business. The old one is so badly used up that they even won't take it in on a trade."

"Gee, it must be in fine shape," I smiled.

"Yes. She is in fine shape," Jimmie replied. "She is in such good shape that the expressman wanted seventy-five cents to haul it to the dump. So now I must make a loan to buy a new one because I simply need it in my business and can not get along without it."

"Why borrow money for it?" I asked. "Doesn't your business afford a new flivver when the old one is dead?"

"What do you mean, the business afford a new flivver?" Jimmie asked in surprise. "When the old one is

gone, I must get a new one, mustn't I?"

"Sure you must," I replied easy like, "but the business must buy it. You should not have to borrow money for it. If the business killed a flivver, it owes you a new one, and should buy it for you."

"What is this kind of bunk you are trying to pull on me?" Jimmie asked in a laughing mood. "Explain yourself and maybe you can interest me in common sense. What you are now doing is making a noise."

"Jimmie," I began earnestly, "you did not figure that old flivver into the price of the jobs that needed it, and now you have no money to buy a new one with. You had an idea that it would last forever, and now you are up against it for delivery."

"Oh," Jimmie answered quickly, "I figured it in my overhead all right."

"You did, did you?" I said with sarcasm. "Then where is the price of it so you can buy a new one?"

"Damfino," Jimmie replied, scratching his head.

"Well," I insisted, "Where is your overhead money for it? You say you have charged it?"

Jimmie scratched his head, but said nothing.

"Jimmie," I went on, "some people scratch their head and think—but you are just scratching your head. You have figured it into your overhead, but you did not figure your overhead high enough to include that flivver. You are a darn poor guesser."

"Gee whiz!" Jimmie exclaimed, "I figure that my overhead is about twenty per cent, and I guess it is not that much."

"You are as wrong as you can be, Jimmie," I explained. "With the volume of business you have, your overhead is nearer to thirty per cent. You just did not figure high enough, and now you are short of the price you need. This is what comes from guessing, and getting low bid work."

"Well, where am I wrong?" Jimmie asked in desperation.

"You are wrong because you did not charge your flivver to each job that used it. If you charge it to overhead, you make people pay for it whether you gave them the use of it or not. This is unfair. But if you add the price of truck service to each job that uses that truck, those jobs that need a truck pay for its use."

"Doggone it," Jimmie said in a confused sort of a way, "what in Sam Hill is overhead anyway?"

"Overhead, Jimmie," I answered, "is all charges not directly chargeable to any particular job. It is the cost of doing business that is part of all the work you do. For instance, Rent, Light, Heat, Office expenses, Office salaries, Your own salary, Fire insurance, Liability insurance, Association dues, Advertising, Telephone (except long distance on a job) and depreciation of tools. That is overhead——"

"Hold on a minute!" Jimmie interrupted. "Did you say that my salary is overhead?"

"Certainly it is. You draw money out of the business for living, don't you?"

"Sure I do," Jimmie admitted, "but that is not overhead, that is my profit."

"Jimmie, you ought to get hung for that fool remark. In a way you are hung for the price of a flivver. Your salary is overhead, and the profit is what is left at the end of the year after all expenses has been paid. If you do not figure that way, you do not get it, and you have nothing left at the end of the year. That is just what a journeyman does, and has no business worries nor does he lose a flivver every two years."

"How about rent as overhead?" Jimmie asked in a sickly way. "I own this tin building, and it is paid for. How can I charge rent when I do not pay rent?"

"Good Lord!" I said impatiently. "Do you mean that this building you have your shop in is not worth at least fifteen dollars a month? What would you rent it for if you had it vacant? How much would you pay as rent for one like it?"

"Well, I'll be jiggered," was all Jimmie said.

"Look at those tools," I continued. "That cornice brake is about all in. It was new when you got it. Who is going to buy a new one for you when it is gone? I suppose the same party who will buy that new flivver for you. Where do you get that system of doing business anyway?"

"Yes, you are right," Jimmie said sadly. "I see where my overhead is nearer to thirty per cent than twenty, all right. I sure lost a good flivver and no money for a new one. And when this cornice brake dies, and when this tin building goes, I will be broke up in business. I am in a bad way sure enough."

"Yes, you are in a bad way," I replied rubbing it in. "You are one of those kind of Smart Alecks that have an idea that if you mix a little with your fellow sheet metal men that you will be robbed. You are one of those little bosses that say associations are no good, and they

can not teach you anything. You are one of those little geezers that have no use for trade papers. Jimmie, I like you because you are a good fellow, but a darn poor business man. Better get wise to yourself, and get right with your book-keeping system. Learn how to make your business pay a profit instead of swiping a perfectly good flivver."

"Yep," Jimmie said slowly with a faraway look in his eyes, "Some people scratch their heads and think, but I only scratch my head. Just as true as gospel. I lost a perfectly good flivver, and no money to buy a new one. Well I'll be darned."

Dear Reader, are you a Jimmie? Are you forgetting that overhead is what pays for things that your business eats up right under your eyes? Do you own your building and think you should get rent free? Is your salary all the profit you are looking for? Do you really know what overhead is?

This case of Jimmie is as true as real gospel. Many sheet metal men get into a perfect rut, and get the habit of making the public a present of the profits.

In business you either win or you lose. You are either a success or you are a failure. There is no half way. You either earn profits or you lose them.

What class are you in? If it is too much trouble to learn good business methods, why ruin business for the rest of the craft in your town?

Believe me, friend, you will never do what you know nothing about. Don't be a chump.

Carl Jolley Becomes Manager of Farm Products Company.

With the advantage of the training and experience which he derived while in the employ of the Milwaukee Corrugating Company, Milwaukee, Wisconsin, Carl Jolley has assumed complete charge of the factory of the Farm Products Company, St. James, Minnesota.

Mr. Jolley has a wide knowledge of the sheet metal manufacturing business and he brings to his new

position the benefit of this knowledge plus a fine enthusiasm.

The Farm Products Company makes farm specialties and sheet metal building products.



Carl Jolley, Farm Products Company, St. James, Minnesota.

C. H. Halverson of Thomas Halverson Lumber Company, is president of the Farm Products Company, and L. Learn is Secretary and Treasurer.

Requests Catalogues and Prices on Hardware, and Tinnery Stock

To AMERICAN ARTISAN AND HARDWARE RECORD:

I have purchased the stock and fixtures of the Berdini Estate at Farmington and will locate there. I would like to have catalogues and prices on hardware, plumbing and tinnery stock.

Yours truly,
C. R. BAUGH,
T. M. Baugh and Son.
Farmington, Illinois,
April 5, 1922.

One boy in a schoolroom is worth two in a poolroom.—*Rudy Furnace Company.*

* * *

If your stomach is wrong when you come down in the morning you are going to start the day wrong, and you will probably finish it wrong.

Sheet Metal Men Expect 3,000 Delegates at Annual Assembly.

Plans have been completed for the annual convention of the state and national associations of sheet metal contractors, which will convene May 15 to 19 in the Cadle Tabernacle, Indianapolis, Indiana.

More than 100 members, headed by the officers of the associations, met in the Denison hotel, where committees were appointed to arrange minor details. The program probably will be announced within a few days. Members and officers of the Jobbers' and Salesmen's Auxiliary also attended the meeting.

A. P. Lamneck of Columbus, Ohio, president of the National Association of Sheet Metal Contractors, in an address, predicted the convention will be the largest ever held by the trade in the United States, and said the exhibition of sheet metal products which would be on display has never been equaled at past conventions. More than 3,000 members are expected to attend.

The great interest evidenced in the convention, he said, is a certain indication that industry is on the rebound, and that the volume of building this year will be greater than at any time since 1914. This prediction, he said, applies particularly to the erection of homes.

The following committees were appointed from the membership of the Indianapolis association: *Hotel committee*, Frank A. Lauck, Albert A. H. Off, Oscar Voorhees, Paul R. Jordan, E. C. Folkening; *Registration*, Richard A. Shirley, A. H. Turner; *Program*, R. R. Reeder, John R. Strahlendorf, Joseph Gardner; *Entertainment*, Charles E. Hall, E. W. Norman and William F. Laut; *Reception*, Joseph Gardner, Joseph E. Mattingly, R. R. Reeder, William S. Waters, W. F. McCain, Joseph Kress, Charles E. Stevenson, Joseph F. Boehm, Frank J. Doyle, Hyman S. Escol, Paul G. Gauss, Thomas V. Lavery, Albert H. Weinland and J. T. Pope.

Accompanying the convention will be more than 100 exhibits, including a model sheet metal shop in full operation. Exhibits will in-

clude working machinery, products, furnaces and supplies. A model office, showing systematic methods of bookkeeping and the most modern efficiency methods will be in the display.

The model shop will occupy a space of forty by eighty feet, and every phase of the work will be demonstrated. The greater part of the work in the shop will be done by students of vocational schools. Foremen from factories and teachers will direct their work.

The meeting was directed by Joseph C. Gardner and Ralph R. Reeder, president and secretary of the state branch of the organization; Joseph Mattingly and W. S. Waters, president and secretary of the Indianapolis association; E. W. Norman and H. A. Beaman, president and secretary of the Jobbers' and Salesmen's Auxiliary. The national association was represented by A. P. Lamneck of Columbus, Ohio, national president.

The Jobbers' and Salesmen's Auxiliary has established temporary headquarters in the Holliday building, Ohio and Alabama Streets, where preliminary arrangements for the convention will be made.

To date, the following exhibitors have secured space for display at the convention:

Exhibitors at Convention of National Sheet Metal Contractors' Association.

R. J. Schwab & Sons Company, Milwaukee, Wisconsin.

Tarpennig Lafollette Company, Indianapolis, Indiana.

Imperial Tool and Machine Company, Indianapolis, Indiana.

Utica Heater Company, Utica, New York.

Tanner and Company, Indianapolis, Indiana.

F. H. Langsenkamp, Indianapolis, Indiana.

AMERICAN ARTISAN AND HARDWARE RECORD, Chicago, Illinois.

Henry Furnace and Foundry Company, Cleveland, Ohio.

Merchant and Evans Company, Chicago, Illinois.

Crawfordsville Wire and Nail Company, Crawfordsville, Indiana.

Hart and Cooley Company, Chicago, Illinois.

The Dunning Heating Supply Company, Milwaukee, Wisconsin.

Home Stove Company, Indianapolis, Indiana.

Waterloo Register Company, Waterloo, Iowa.

J. M. & L. A. Osborn Company, Cleveland, Ohio.

Monitor Stove Company, Cincinnati, Independent Stove Company, Owosso, Michigan.

Fryburger and Eilers, Indianapolis, Indiana.

Excelsior Steel Furnace Company, Chicago, Illinois.

National Paint Company, Cleveland, Thomas and Armstrong Company, London, Ohio.

Mount Vernon Furnace and Manufacturing Company, Mount Vernon, Illinois.

Rudy Furnace Company, Dowagiac, Michigan.

Waterman-Waterbury Company, Minneapolis, Minnesota.

Superior Sheet Steel Company, Canton, Ohio.

Van Camp Hardware and Iron Company, Indianapolis, Indiana.

Marshalltown Manufacturing Company, Marshalltown, Iowa.

Follansbee Brothers Company, Indianapolis, Indiana.

F. Dieckmann Company, Cincinnati, Manny Heating and Supply Company, Chicago, Illinois.

N. & G. Taylor Company, Philadelphia.

W. J. Holliday and Company, Indianapolis, Indiana.

A. Ach & Sons Company, Dayton, Ohio.

U. S. Register Company, Battle Creek, Michigan.

Charles Johnson Hardware Company, Peoria, Illinois.

Williamson Heater Company, Cincinnati, Ohio.

New Jersey Zinc Company, New York.

Fox Furnace Company, Elyria, Ohio.

Auer Register Company, Cleveland, Lennox Furnace Company, Marshalltown, Iowa.

Marsh Lumber Company, Dover, Ohio.

Braden Manufacturing Company, Terre Haute, Indiana.

Rock Island Register Company, Rock Island, Illinois.

Meyer Furnace Company, Peoria, Illinois.

F. Meyer Brothers Company, Peoria, Illinois.

Minneapolis Heat Regulator Company, Minneapolis, Minnesota.

Majestic Company, Huntington, Indiana.

F. O. Schoedinger, Columbus, Ohio.

Chapman Price Steel Company, Indianapolis, Ind.

Steelcote Manufacturing Company, St. Louis, Missouri.

H. H. Robertson Company, Pittsburgh.

Whitney Metal Tool Company, Rockford, Illinois.

Danzer Sheet Metal Works, Hagerstown, Ind.

Haynes - Langenberg Manufacturing Company, St. Louis, Missouri.

American Rolling Mill Company, Middletown, Ohio.

Peerless Foundry Company, Indianapolis, Indiana.

Berger Manufacturing Company, Rockford, Illinois.

Tyree Radiator Manufacturing Company, Chicago, Illinois.

Michigan Stove Company, Detroit.

Eaglesfield Ventilator Company, Indianapolis, Indiana.

W. E. Lamneck Company, Columbus, Kruse Company, Indianapolis, Indiana.

Standard Metal Company, Indianapolis, Indiana.

Dreis & Krump Company, Chicago.

Carter Paint Company, Liberty, Indiana.

Anaconda Copper Company, New York City.

Homer Furnace Company, Coldwater, Michigan.
 Farris Furnace Company, Springfield, Illinois.
 Nebel Manufacturing Company, Cleveland, Ohio.
 Tuttle and Bailey Company, New York.
 Detroit Stove Works, Detroit, Michigan.
 Stearns Register Company, Detroit.
 Smither Roofing Company, Indianapolis, Indiana.
 Paul R. Jordan Company, Indianapolis, Indiana.
 W. C. Fletcher, Indianapolis, Indiana.
 Ewert and Kutschied Company, Chicago, Illinois.
 Rich Pump and Ladder Company, Cincinnati, Ohio.
 Forest City Foundry & Manufacturing Company, Cleveland, Ohio.
 Hunter Hardware, Rockford, Illinois.
 Star Foundry Company, Evansville, Indiana.
 H. W. Laut and Company, Indianapolis, Indiana.
 Twentieth Century Heating Company, Indianapolis, Indiana.
 Parker Supply Company, New York.
 Hall-Neal Furnace Company, Indianapolis, Indiana.
 Premier Warm Air Heater Company, Dowagiac, Michigan.
 Friedley-Voshardt Company, Chicago.
 W. H. Johnson Company, Indianapolis, Indiana.

Overcomes Sixty Per Cent of All Burner Troubles.

By using the new patented Double Blunt Needle Burner and by adding other improvements, the Clayton & Lambert Manufacturing Company, Detroit, Michigan, overcomes fully 60 per cent of all burner



Clayton-Lambert No. 1 Improved Double Needle Fire Pot.

troubles in the Clayton-Lambert No. 1 Improved Double Needle Fire Pot, illustrated herewith.

The upper needle is fitted with a wire tip for cleaning the orifice.

The flame is controlled entirely by the lower needle and as both needles are blunt it is impossible to enlarge the gas orifice which, it is claimed, is the cause of all old style burners, having sharp pointed

needles, being ruined by screwing up the needle too tight.

The same high grade construction is maintained throughout.

Tank is of heavy gauge seamless drawn steel, tinned inside and out, making it rust proof, fitted with Patented Cushion Protection Band preventing injury to the base.

A filler plug with patented dust proof cap closes the large funnel and patented pump with double spring automatic check valve produces air pressure quickly.

The heaviest irons are thoroughly heated, the flame being so directed that the heel of the copper is in the hottest part of the flame and a pot of metal can be melted at the same time.

An open fire can be obtained by removing the top section.

Complete information and a catalog can be secured by writing to the Clayton & Lambert Manufacturing Company, 10635 Knodell Avenue, Detroit, Michigan.

Notes and Queries

"Eclipse" Eaves Trough Hanger.

From M. A. Freeman, Poseyville, Indiana.

Can you tell us who makes the "Eclipse" eaves trough hanger?

Ans.—Milwaukee Corrugating Company, Milwaukee, Wisconsin.

"Simplex" Roofing Nails.

From Mehl Brothers Sheet Metal Works, 807 Union Street, Coffeyville, Kansas.

Who manufactures "Simplex" roofing nails?

Ans.—Crescent Brass and Pin Company, 5766H Trumbull, Detroit, Michigan, and H. B. Sherman Manufacturing Company, Battle Creek, Michigan.

Gas Laundry Dryers.

From Metzner Stove Repair Company, 515-17 Wyandotte, Kansas City, Missouri.

Can you advise us who manufactures good size gas laundry dryers for large apartment houses?

Ans.—Williamson Heater Company, Cincinnati, Ohio; Chicago Dryer Company, 2210-18 North Crawford Avenue, Chicago, Illi-

nois; and Hill-Canton Dryer Company, Canton, Ohio.

Nickeloid.

From D. and F. Kusel Company, 108-112 West Main Street, Watertown, Wisconsin.

Please advise us who manufactures nickeloid.

Ans.—Apollo Metal Works, La Salle, Illinois.

Asphalt Roofing Mops.

From Mehl Brothers Sheet Metal Works, 807 Union Street, Coffeyville, Kansas.

Will you kindly inform us who makes asphalt roofing mops?

Ans.—B. K. Lyman and Company, 312 West Austin Avenue, Chicago, Illinois.

Repairs for "Boston Special" Lawn Mower.

From James A. Black Hardware Company, 3200 East 92nd Street, South Chicago, Illinois.

Can you advise us where we can procure repairs for the "Boston Special" lawn mower?

Ans.—R. Herschel Manufacturing Company, Peoria, Illinois.

Bird Houses.

From H. E. Flesher, Lexington, Illinois.

Please inform me who manufactures bird houses.

Ans.—Joseph H. Hodson, Kan-kakee, Illinois; Put-Together Handicraft Shop, Elmhurst, Illinois; and Evan L. Reed Manufacturing Company, Sterling, Illinois.

Asbestos Shingles.

From Fred L. Michaels, Arcadia, Indiana.

Kindley let me know who manufactures asbestos shingles.

Ans.—Trus-Con Laboratories, Caniff and Grant R. R., Detroit, Michigan; Asbestos Shingle Company, Nashua, New Hampshire; Igoe Brothers, 31-37 Metropolitan Avenue, Brooklyn, New York; and National Asbestos Manufacturing Company, 193 Henderson, Jersey City, New Jersey.

A reputable manufacturer's name on an article is the modern guarantee of quality.

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Courtesy should know no favorites. Unless you can treat all customers with courtesy you can not hope to achieve great success behind the counter.

Descriptive Index and Guide to New Patents.

Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.

1,399,315. Sheet Metal Fastener. Carlos Juventino Ocampo, Los Angeles, Calif. Filed April 1, 1920.

1,399,456. Pipe or Conduit Hanger. James F. Barry, Chicago, Ill. Filed January 20, 1921.

1,399,482. Wringer. Herman C. Hirschy, Minneapolis, Minn. Filed March 1, 1920.

1,399,513. Egg Beater. Albert F. Nyberg, Minneapolis, Minn. Filed April 19, 1920.

1,399,601. Lawn Mower Attachment. William J. Boll, Platteville, Wis. Filed September 16, 1920.

1,399,619. Stovepipe Thimble Attachment. Harry Heffner, Cleveland, Ohio. Filed February 21, 1920.

1,399,621. Wrench. Arthur D. Hullett, Newport, Tenn. Filed February 23, 1921.

1,399,632. Vise. John R. Long, Akron, Ohio, assignor to The Akron Wrench and Vise Company, Akron, Ohio, a Corporation of Ohio. Filed July 5, 1921.

1,399,637. Draft Regulator. Peter Marczynski, Milwaukee, Wisconsin. Filed February 28, 1921.

1,399,665. Combination Tool. Samuel Shapiro, Philadelphia, Pa. Filed May 8, 1920.

1,399,672. Stovepipe and Chimney Clamp. James Clarence Teller, Jefferson, S. D. Filed July 25, 1919.

1,399,704. Cooking Stove. Jacob Eida, South Boston, Mass. Filed June 12, 1919.

1,399,786. Bench Vise. Jack E. Messenger, Des Moines, Iowa. Filed June 1, 1920.

1,399,960. Pipe Hanger. William Harding, Cleveland, O. Filed March 16, 1921.

1,400,148. Soldering Iron. Alonzo A. Frum, Columbus, Ohio. Filed January 28, 1921.

1,400,309. Egg Beater. George D. Munsing, New York, N. Y. Filed October 20, 1920.

1,400,388. Washing Machine. Lawson J. Stukey, Pittsburgh, Kans. Filed May 17, 1921.

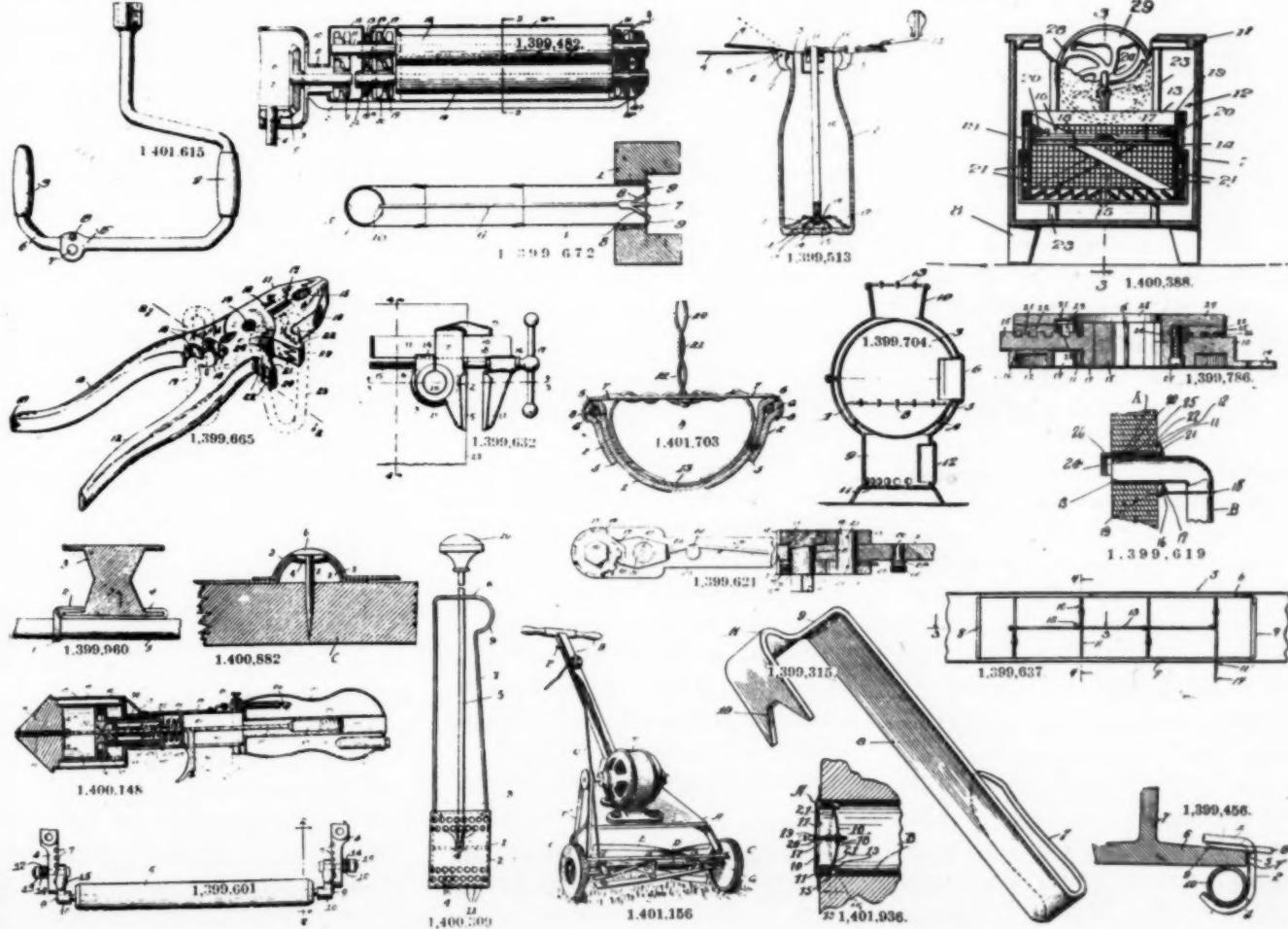
1,400,882. Metal Ceiling. William H. Klauer, Dubuque, Iowa. Filed September 23, 1916. Serial No. 121,805. Renewed July 11, 1921.

1,401,936. Flue Stopper. Lafayette J. Allie, St. Paul, Minn. Filed February 24, 1920.

1,401,156. Lawn Mower. Charles Francis Jenkins, Washington, D. C., assignor to Moto-Mower Company, Detroit, Mich., a Corporation of Michigan. Filed June 5, 1920.

1,401,615. Wrench. Frederick K. Lawrence, Chicago, Ill. Filed May 1, 1920.

1,401,703. Eaves Trough and Support. Jacob E. Hyre, Urbana, Ill. Filed June 22, 1920.



Review of Conditions in the Metal Markets.

General Situation in the Steel Industry. Report of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

Stronger Tone Prevails in Copper Market.

Buying of copper is more active. Foreign consumers have placed orders for about 2,000 tons and 2,000 tons or more are under negotiation.

Practically all of the business closed is for European shipment, but there are numerous inquiries for casting copper for shipment to China.

Domestic consumers are showing more interest with larger orders placed with producers at rising prices and more inquiries are in the market. Some belated buyers who tested the market thoroughly yesterday, were unable to buy electrolytic within $\frac{1}{8}$ to $\frac{1}{4}$ c per pound of sales made the latter part of last week. It is claimed that March sales were much heavier than previously reported, some estimates of domestic and foreign orders being as high as 200,000,000 pounds.

Today some business was done in electrolytic at $12\frac{3}{4}$ c delivered Connecticut Valley for second quarter shipment. Other producers, however, are refusing to sell at $12\frac{3}{4}$ c delivered, either for nearby or future shipment. Even custom smelters are not inclined to sell for shipment beyond June or possibly July.

As a result of the stronger tone, wire drawers have advanced rods to $13\frac{1}{2}$ to $13\frac{3}{4}$ c and wire to 14 to $14\frac{1}{4}$ c per pound. The manufactured business has improved decidedly. Brass mills especially have had an active demand in the last two weeks, and the outlook for the future is encouraging. Large sales of steel products in the last month have forecast larger buying of copper and brass products.

Exports reported from New York today were 1,140 tons or a total of 2,436 tons since April 1st.

In the outside market, inquiries today were more productive of business and the inquiries were both

more numerous and for larger amounts.

Lake copper is also stronger at $12\frac{3}{4}$ c delivered for nearby shipment. Casting copper is firmer, in sympathy with electrolytic. Some sales of casting have been made at 12.30c f. o. b. refinery and some holders are now asking $12\frac{3}{4}$ c refinery.

Tin.

The tin market today is in a quiet but firm condition with prices $\frac{1}{2}$ c higher. Sales of Straits tin for April, May and June shipment from the East are reported at $29\frac{1}{2}$ c and there are offers to sell early deliveries at the same price. Ninety-nine per cent tin is quoted at $28\frac{7}{8}$ c and as the principal holders are indifferent about selling it is doubtful whether any concession would be made from this price.

Solder.

There has been a slight advance in the Chicago prices of solder.

The quotations now in effect are:

Warranted, 50-50, per 100 pounds, \$20.00; Commercial, 45-55 per 100 pounds, \$18.50; and Plumbers', per 100 pounds, \$17.25.

Zinc.

There have been no changes in zinc prices. There is, however, an undoubted betterment in the volume of business and it seems rather a gradual quickening than a rush of demand.

One unexpected feature is there is not as much demand for April shipment as was expected in view of the report that stocks were small.

Evidently, many buyers have been fairly well supplied for immediate need though there has been some inquiry where prompt delivery is desired. This shows an irregular condition in regard to consumers' stock, but no general under supply.

Lead.

The market continues strong, and though producers who withheld fur-

ther sales of April till the month arrived are now letting some more April delivery go, their offerings are very light.

Demand is reported not quite so keen at the advanced prices, but the strength of the April position cannot be gainsaid, and it is very doubtful if much can be had in the Western outside market at the "official" figure.

Chicago quotations, which show a very slight increase are now: American pig at 5.10 per 100 pounds, and bar lead at \$5.85 per 100 pounds.

Sheets.

The sheet market has been very active in the past week as a result of the intention of the mills to advance prices \$3 a ton. The buying trade has evidently been convinced that a general advance will become actually effective in the market. Nearly all the sellers had definitely signified their intention of advancing prices, and the trade assumed that the intention existed, whether announced or not. The majority of sellers, who announced their intention in advance, named April 1st as the effective date for the advance, and in accordance with this announcement many notices were sent out Saturday recalling all outstanding quotations.

Tin Plate.

Production of tin plate increased steadily during March, to a point at which nearly all the plants are running full.

Tin plate production in January was nearly if not quite equal to the record for a January, while March now makes a favorable comparison with the average for March in the years of big production.

Very few of the independents are carrying more than what is considered normal stock.

The record of tin plate production and shipments points plainly to

1922 being easily a record year in tin plate, and the only uncertainty worth considering at all arises from the influence of the coal strike.

To an extent some buyers of tin plate anticipated their requirements from fear that the coal strike would restrict production or shipments in the second quarter, and to the extent that this was done the first quarter exhibit is not a perfect criterion as to second quarter prospects. The extent of this anticipation cannot be estimated with any closeness, but the producers do not seem to think it counts for much.

The independent mills are occupying a much firmer attitude in the matter of prices and point out that their regular price is \$4.75, divergences from this being only in case of conspicuously large orders. The leading interest's price has been \$4.75 right along.

Pig Iron.

In the pigiron market the main fact is that the volume of business is constantly growing.

Buyers are beginning to show a desire to contract ahead instead of purchasing from hand to mouth.

The tonnage placed during March was far in excess of that recorded for any month since the 1920 slump.

Southern Foundry No. 2 is now quoted at \$22.16 to \$22.56.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$13.50 to \$14.00; old iron axles, \$19.50 to \$20.00; steel springs, \$13.25 to \$13.75; No. 1 wrought iron, \$12.00 to \$12.50; No. 1 cast, \$13.50 to \$14.00 all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light coppers, $7\frac{1}{4}$ cents; light brass, 4 cents; lead $3\frac{1}{4}$ cents; zinc, 2 cents; and cast aluminum, $9\frac{1}{4}$ cents.

Steel.

The fact that March was the best month in the steel industry in more than a year and a half is being reflected in a continued expansion of operating schedules at the mills.

It is estimated that orders for pig iron booked during March totaled 600,000 tons, the largest volume of business for any month in a year and a half. Of course, this total was materially swelled by the 75,000 tons for the New York-New Jersey tunnel.

In the Buffalo district, orders placed during the past week aggregated

between 40,000 and 50,000 tons and the price has advanced at least 50 cents to \$18.50 a ton for the base grade. In the New York territory last week's bookings amounted to approximately 10,000 tons and at least one Eastern Pennsylvania furnace advanced its price from \$20 to \$20.50 a ton for No. 2 foundry.

Pig Iron Report Shows Optimistic Predictions for Spring Are Becoming Realities.

The Cause Is a Healthy Increase in Melt Due to an Awakening in Practically All Lines of Foundry Work.

Rogers, Brown and Company of Cincinnati, have the following optimistic report to make in their weekly market letter issued April 8, 1922:

"Many of the good things predicted by optimists for this spring are becoming realities. The week just closed has been the strongest the pig iron industry has experienced for many months. Cincinnati and the surrounding territory has felt the improvement less than almost any other district. Numerous small orders running up to 400 and 500 tons, however, indicate a broadening interest which, it is expected, will prove to be the forerunner of heavier business. Elsewhere, confident buying of large tonnages is being indulged in. In the East it is estimated that 25,000 to 30,000 tons of basic and 10,000 tons of foundry iron were placed in the Philadelphia territory, about 12,000 tons of foundry in and around New York, while Boston reports an attractive total, and in the Buffalo district conditions closely approximate an old time buying movement. Chicago reports three sales of foundry iron totaling close to 5,000 tons, in addition to a run of small orders which make up an impressive figure. In St. Louis and the Southwest there is more activity than has been apparent since the toboggan of 1920.

"The cause is a healthy increase in melt due to an awakening interest in practically every line of foun-

dry work. Railroad buying is attracting comment and even agricultural implement makers report better business. Steelmakers notice a continued improvement and are especially gratified over the requisitions for the heavier lines such as structurals.

"The effect is noticeable in advancing prices. The Chicago furnaces made advances some weeks ago and these are being maintained firmly. One interest in the Birmingham district has advanced to \$16.50 base. Two others followed by moving their prices to a base of \$16.00 and it is expected that before the close of the present week the market will be firm at \$16.00 to \$16.50 base. Very little iron is available for shipment prior to July 1st and unless prices are advanced further, the furnacemen advise there will be no temptation to increase production. Eastern Pennsylvania furnaces have advanced to \$20.00 base, while the most radical advances have been made in Buffalo. Some of the furnaces in that district have withdrawn from the market and \$19.00 base for foundry or malleable appears to be the minimum. It is important to recall that these advances have followed heavy sales and that the sales were not stimulated by advances.

"Coke activity has been confined largely to prompt shipment business. So far, the strike has not been felt by the consumer."

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry	20 00
Southern Fdy. No. 2	22 16 to 22 56
Lake Sup. Charcoal.	26 00 to 29 00
Malleable	20 00

FIRST QUALITY BRIGHT TIN PLATES.

	Per Box	
IC	14x20 112 sheets	\$10 00
IX	14x20	11 25
IXX	14x20	12 60
IXXX	14x20	13 90
IXXXX	14x20	15 25
IC	20x28	20 00
IX	20x28	22 50
IXX	20x28	25 20
IXXX	20x28	27 80
IXXXX	20x28	30 50

COKE PLATES.

Cokes, 180 lbs.	20x28	\$11 80
Cokes, 200 lbs.	20x28	12 00
Cokes, 214 lbs.	IC 20x28	12 35
Cokes, 270 lbs.	IX 20x28	14 10

BLUE ANNEALED SHEETS.

Base	per 100 lbs.	\$3 38
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ONE PASS COLD ROLLED BLACK.

No. 18-30	per 100 lbs.	\$3 95
No. 22-24	per 100 lbs.	4 00
No. 26	per 100 lbs.	4 05
No. 27	per 100 lbs.	4 10
No. 28	per 100 lbs.	4 15
No. 29	per 100 lbs.	4 25

GALVANIZED.

No. 16	per 100 lbs.	\$4 40
No. 18-30	per 100 lbs.	4 55
No. 22-24	per 100 lbs.	4 70
No. 26	per 100 lbs.	4 85
No. 27	per 100 lbs.	5 00
No. 28	per 100 lbs.	5 15
No. 30	per 100 lbs.	5 65

BAR SOLDER.

Warranted.		
50-50	per 100 lbs.	\$20 00

Commercial.		
45-55	per 100 lbs.	18 50
Plumbers	per 100 lbs.	17 25

ZINC.

In Slabs		5 30
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SHEET ZINC.

Cask lots, stock		9c
Less than cask lots		9 1/2c

COPPER.

Copper Sheet, mill base		\$0 20
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LEAD.

American Pig		\$5 10
Bar		5 85

Sheet.		
Full coils	per 100 lbs.	7 50
Cut coils	per 100 lbs.	7 75

TIN.

Pig tin		32
Bar tin		34

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.	Net
Barton's	Net

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder	18%
Loaded with Smokeless Powder	18%
Winchester.	
Smokeless Repeater	
Grade	20 & 4%
Smokeless Leader	
Grade	20 & 4%
Black Powder	20 & 4%
U. M. C.	
Nitro Club	20 & 4%
Arrow	20 & 4%
New Club	20 & 4%

GUN WADS—per 1000.

Winchester	7-8 gauge	10 & 7 1/2%
"	9-10 gauge	10 & 7 1/2%
"	11-12 gauge	10 & 7 1/2%

ASBESTOS.

Paper up to 1/16	6c per lb.
Rollboard	6 1/4c per lb.
Millboard 2/32 to 1/8	6c per lb.
Corrugated Paper (250 sq. ft. to roll)	\$6.00 per roll

AUGERS.

Boring Machine	40 @ 40 & 10%
Carpenter's Nut	50%
Hollow.	
Bonney's	per doz. \$30 00

POST HOLE.

Iwan's Post Hole and Well	
"	30 and 5%
Vaughan's, 4 to 9 in., without handles	per doz. \$14 00

AWLs.

Brad.	per doz. \$0 65
No. 1050 Handled	" 1 40
Patent asst'd, 1 to 4	" 35

Harness.

Common	per doz. \$1 05
Patent	" 1 00

Peg.

Shouldered	" 1 80
Patented	" 75

Scratch.

No. 18, socket Handled	per doz. \$2 50
No. 244 Goodell-Pratt, list lens	35-40%
No. 7 Stanley	per doz. \$2 25

AXES.

First Quality, Single Bitted (unhandled), 3 to 4 lb.	per doz. \$11 00
Good Quality, Single Bitted, same weight, per doz.	10 00

BALANCES, SPRING.

Universal.	
Sight Spring	List less 25%
Straight	List less 25%

BARS, WRECKING.

V. & B. No. 12	\$0 45
V. & B. No. 24	0 75
V. & B. No. 324	0 80
V. & B. No. 36	0 85
V. & B. No. 380	0 90

BEVELS, TEE.

Stanley's Rosewood handle, new list	Nets
Stanley's Iron handle	Nets

BINDING CLOTH.

Zinc	55%
Brass	40%
Brass, plated	60%

BITS.

Auger.	
Jennings Pattern	Net
Ford Car	25% off
Ford's Ship	25% off
Irwin	35%
Russell Jennings	less 10%
Clark's Expansive	33 1/3%
Center	10%

Countersink.

American Snailhead	" 1 75
" Rose	" 2 00
" Flat	" 1 40

Dowel.

Russell Jennings	plus 20%
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Gimlet.

Standard Double Cut Gross	\$8 40
Nail Metal Single Cut	\$4 00-\$5 00

Reamer.

Standard Square	Doz. \$2 50
American Octagon	" 2 50